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1	**ALBERTA**			
2	**Source**		**DIRECT QUOTE**	**MAIN POINT**
3	**EMERGENCY MANAGEMENT ACT -ALBERTA**		Ministerial orders 10(1) The Minister may, by order (d) require a person to whom the order is directed and i. who is engaged or may be engaged in any operation, ii. who is utilizing or may be utilizing any process, iii. who is using any property in any manner, or iv. on whose real property there exists or may exist any condition, that may be or may create a hazard to persons or property, whether independently or as a result of some other event, to develop plans and programs in conjunction with one or more local authorities to remedy or alleviate the hazard and to meet any emergency that might arise from the hazard.	The Act gives the Minister power to order the development of plans and programs to remedy, or alleviate hazards and meet any emergency that might arise from the hazard.
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7	PETROLEUM INDUSTRIES INCIDENT SUPPORT PLAN	Page 4	**FOREWORD** The Petroleum Industry Incident Support plan is the provincial-level plan to direct Government of Alberta operations to support a local authority or licensee during an emergency. It is intended solely for provincial departments and agencies.	Guidelines for provincial operations support.
8	PETROLEUM INDUSTRIES INCIDENT SUPPORT PLAN	Page 10 Section 2.3	**Plan Objective** **2.3 Assumptions** • Licensees have adequate ERP's • Confirmation and coordination of roles and responsibilities between local authority and the licensee has taken place.	Plan assumes licensees have adequate ERPs and coordination with local authorities.
9	PETROLEUM INDUSTRIES INCIDENT SUPPORT PLAN			

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12	PIPELINE ACT	Page 7 Part 1 Section (2)	**Part 1** **Application of Act** **Application of Act** **2** Except as otherwise provided in this Act, this Act applies to all pipelines in Alberta other than (a) a pipeline situated wholly within the property of a refinery, processing plant, coal processing plant, marketing plant or manufacturing plant, (b) a pipeline for which there is in force (i) a certificate, or (ii) an order exempting the pipeline from a certificate, issued or made by the National energy Board under the National Energy Board Act (Canada),	The Act excludes pipelines that are regulated by the NEB and pipelines situated wholly within the property of a refinery.
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14	PIPELINE ACT			
15	PIPELINE ACT	Page7, 8 Section (3)	**Part 2 Regulations** 3(1) The Board may make regulations (c) regarding matters preparatory to or in connection with the design, construction, testing, operation, maintenance or repair of pipelines;	The Act applies to the design, construction, testing, operation, maintenance or repair of pipelines.
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18		Page 10 Section (3.1)	**Part 3 Powers and Duties of the Board** **Jurisdiction of Board** 3.1(1) Subject to subsection (2), the board has jurisdiction with respect to pipelines. (2) The Alberta Utilities Commission has jurisdiction with respect to gas utility pipelines….	The Act separates authority for pipelines and utility pipelines.
19	PIPELINE ACT	Page 24/ Section 36(1)	**When a substance escapes from a pipeline** and it appears to the Board that the substance may not otherwise be contained and cleaned up forthwith**, the Board may** (a) **direct the pipeline operator or license**e, or those pipeline operators or licensees who in the opinion of the Board could be responsible for a pipeline from which the substance escaped**, to take any steps that the Board considers necessary to contain and clean up**, to the satisfaction of the Board and the Department of Environment, the substance that has escaped and to prevent further escape of the substance, or (b) enter on the area where the substance has escaped and conduct any operations it considers necessary to contain and clean up the substance that has escaped and to prevent further escape of the substance	

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20	PIPELINE ACT			
21	PIPELINE ACT			
22	PIPELINE ACT	Page 11 Section 5(1)	**Inspections** **5(1)** At any reasonable time, a member of the Board or a person authorized by the Board (d) may make inspections, investigations or tests (i) of pipelines (e) may **inspect all books, records** and documents pertaining to the construction, operation and maintenance of pipelines…..	The ERCBs member or authorized person may inspect, investigate or test a pipeline and may inspect records relating to construction, operation and maintenance of a pipeline.
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24	PIPELINE ACT	Page 14 Section 12	**Part 4 Licences** **Board's powers re licences** **12** The Board, on the request of the licensee or on its own initiative, may (b) **suspend a licence** (c) cancel a licence	The Act gives the ERCB authority to suspend or cancel licences.
25	PIPELINE ACT	Page 14 Section 16(1)	**License to operate** **16(2)** No person shall operate a pipeline unless the pipeline has first been tested pursuant to the regulations or as otherwise approved by the Board, and been found to be satisfactory.	The Act requires licensee to operate pipelines and that the pipeline be tested as per regulations set by the ERCB before being operated.
26	PIPELINE ACT	Page 20 Section 29(1)	**Part 5 Suspension and Shutting Down** **Suspension of construction or operation** **29(1**) Where it appears to the Board or its authorized representative that in the construction or operation of a pipeline or in the undertaking of a ground disturbance there has been or is a contravention of this Act, the regulations, a licence or an order or direction of the Board, or that a method or practice employed or any equipment or installation at a pipeline or in a controlled area is improper, hazardous, inadequate or defective, (a) the Board or its representative may order that the construction or operation of the pipeline, or the ground disturbance, is suspended and shall not be resumed until i. the contravention ceases or this act or the regulation, licence or order or direction of the board is complied with, ii. approved methods or practices are employed or adopted, iii. remedial measures are taken, or iv. proper, safe and adequate equipment is used, (b) the Board or its representative may order that the construction or operation of the pipeline or the ground disturbance be suspended to further order, or (c) the Board may call an inquiry.	The Act defines the process for suspension of the operations of a pipeline due to a contravention of the Act, regulations, licence or order or direction of the ERCB. The Act gives power to the ERCB to call an inquiry.
27	PIPELINE ACT			

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28	PIPELINE ACT			
29	PIPELINE ACT			
30	PIPELINE ACT	Page 31 Section 52(2)	**Part 8 Miscellaneous** **Offences** **52(2)** A person who a) whether as a principal or otherwise, contravenes any provision of this Act or of the regulations or of any order, direction or licence under this Act, is guilty of an offence.	The Act states contravention to the Act, regulations, any order or directions is an offence.
31	PIPELINE ACT	Page 31-32 Section 52(1), (2)	**Fines** **54(1)** Subject to subsection (2), a person who is guilty of an offence under this Act is liable a) If a corporation, to a fine not more than $10 000, or b) If an individual, to a fine not more than $5000 **(2)** a person who is found guilty of an offence under this Act that is a continuing offence is liable a) if a corporation, to a fine of not more than $10000 for the first day on which the offence occurs and not more than $5000 for each subsequent day during which the offence continues, or b) if an individual, to a fine of not more than $5000 for the first day on which the offence occurs and not more than $2500 for each subsequent day during which the offence continues. **(3)** A person other than a corporation who defaults in payment of a fine imposed for a continuing offence is liable to imprisonment for a term not exceeding 6 months.	The Act establishes a maximum for fines and imprisonment for offences.

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32	PIPELINE ACT			
33	PIPELINE ACT			
34	PIPELINE ACT	Page 11 Section 4	**Part 3** **Powers and Duties of the Board** **Investigations by Board** **4** The Board, when required by the Lieutenant Governor in Council shall, or on its own motion may, inquire into, examine and investigate any matter relating to (b) the observance of safe and efficient practices in the construction, operation, discontinuation and abandonment of pipelines;	The Act gives the ERCB power to conduct investigations.
35	PIPELINE ACT			

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36	PIPELINE REGULAITON	Page 5-6 Section 1(1)	**Part 1** **Administration** **Interpretation** **1(1)** In this Regulation (f) "corporate emergency response plan" means a general emergency response plan that applies to all wells, pipelines and facilities of a licensee; (k) "emergency' means a present or imminent event, outside the scope of normal operations, that requires prompt coordination of resources to protect the health, safety or welfare of people or to limit damage to property and the environment; (l) "emergency response plan" means a comprehensive plan to protect the public that includes criteria for assessing an emergency and procedures for mobilizing response personnel and agencies, establishing communications and ensuring coordination of the emergency response; **(4)** For the purposes of the Act and this Regulation, if piping or a pipeline that conveys gas, steam or HVP product is contained wholly within the boundary of a facility surface lease or wholly within the boundaries of adjacent and abutting surface leases, it is not considered a pipeline.	
37	PIPELINE REGULAITON	Page 13-14 Section 9(3)	**Part 2** **Materials and Design** **Codes and Standards** **Section 9(3**) Except as otherwise specified in this regulation, the minimum requirements for the design, construction, testing, operation, maintenance, repair and leak detection of pipelines are **set out in CSA Z662**	Regulation establishes the minimum requirements for the design, construction, testing, operation, maintenance, repair and leak detection of pipelines as *CSA Z662*.
38	PIPELINE REGULAITON			

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39	PIPELINE REGULAITON	Page 12-13 Section 8(1)	**Part 1 Administration** **Emergency response plans** **8(1)** a licensee of a pipeline shall prepare and maintain a corporate emergency response plan in accordance with the requirements of Directive 071 and shall submit a copy to the Board for review on request. **(2)** A licensee of a pipeline conveying HVP product shall prepare a site-specific emergency response plan in accordance with Dir 071 and shall, In the case of a pipeline that is not yet in operation, submit the plan to the Board and obtain the Board's approval of the plan before putting the pipeline into operation, and In the case of a pipeline already in operation, submit the current site – specific emergency response plan for the pipeline to the Board for review. **(3)** For a pipeline conveying a product that contains hydrogen sulphide gas in the gas phase when the pipeline is operating at the licensed conditions, a licensee shall calculate the emergency planning zone in accordance with Directive 071 and determine the emergency planning zone. **(4)** If any surface development exists or is taking place within the calculated emergency planning zone of a pipeline referred to in subsection (3), the licensee shall prepare a site-specific emergency response plan in accordance with Directive 071, and shall, a) in the case of a pipeline that is not yet in operation, submit the plan to the board and obtain the board's approval of the plan before putting the pipeline into operation, and b) in the case a pipeline already in operation, submit the current site-specific emergency response plan to the board for review. **(5)** If there is no surface development within the calculated emergency planning zone of a pipeline referred to in subsection (3),the licensee shall prepare and maintain a corporate emergency response plan in accordance with Directive 071 and shall submit a copy to the Board for review on request.	Regulation requires all pipelines to have a corporate emergency response plan as per *Directive 071*. Regulation requires HVP licenced pipelines to develop site specific emergency response plans as per *Directive 071*, and to obtain ERCB approval of such plans prior to pipeline activation. Regulation requires pipelines with H2S in the gas phase to calculate emergency planning zones (EPZ) as per *Directive 071*. Regulation requires a site-specific emergency response plan if any surface development exists within the EPZ. Regulation requires a licensee to update ERPs, conduct training exercises and ensure that it is capable to adequately respond to spills.
40	PIPELINE REGULAITON	Page 12-13 Section 8(1)	The licensee shall prepare **(6)** a licensee of a pipeline shall, in accordance with Directive 071, a) Update all emergency response plans for the pipeline, as necessary, b) Conduct training exercises in carrying out emergency response plans, and c) Ensure that it is capable of adequately responding to spills.	A licensee shall prepare and update its emergency response plan, conduct training exercises for ERP and spill response according to *Directive 071*.
41	PIPELINE REGULAITON			
42	PIPELINE REGULAITON			

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43	PIPELINE REGULAITON			
44	PIPELINE REGULAITON			
45	PIPELINE REGULAITON			
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47	PIPELINE REGULAITON			

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48	PIPELINE REGULAITON	Page 10 Section 1.2(1)	**Part 1 Administration** **Compliance with Directives** 1.2(1) A licensee shall comply with the requirements of Directive 077.	A licensee shall comply with the requirements of *Directive 077*.
49	PIPELINE REGULAITON			
50	DIRECTIVE 19 - COMPLIANCE ASSURANCE	Page 4-13 Section 4	Notice of Low Risk noncompliance Low Risk Enforcement Action Notice of High Risk Non Compliance High Risk Enforcement Action High Risk Enforcement Action (Persistent Noncompliance) High Risk Enforcement Action (Failure to Comply) High Risk Enforcement Action (Demonstrated Disregard)	*Directive 019* outlines how the ERCB manages compliance assurance.
51	DIRECTIVE 19 - COMPLIANCE ASSURANCE			
52	DIRECTIVE 19 - COMPLIANCE ASSURANCE			

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53	DIRECTIVE 19 - COMPLIANCE ASSURANCE			
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58	DIRECTIVE 19 - COMPLIANCE ASSURANCE			
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63	DIRECTIVE 19 - COMPLIANCE ASSURANCE			
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65	DIRECTIVE 19 - COMPLIANCE ASSURANCE			
66	DIRECTIVE 19 - COMPLIANCE ASSURANCE			
67	DIRECTIVE 56 - ENERGY DEVELOPMENT APPLICATIONS AND SCHEDULES	Page 6-10 Section 6.9	**Section 6** **Pipeline Licence Applications** **6.9 Technical Requirements** **6.9.1 Emergency Response Planning** The emergency planning zone (EPZ) for pipelines containing H2S in the gas phase and operating at pipeline licence conditions is based on the release volume from the pipeline. An EPZ is also calculated for high vapour pressure (HVP) pipeline. Applicants are cautioned that it is a violation of privacy legislation to disclose any personal information that was obtained for emergency response planning purposes. Such information must be provided in confidence to the ERCB in connection with the emergency response planning requirements set out in Directive 71.	Disclosure of personal information by applicant obtained for emergency response planning purposes is violation of privacy legislation and must be provided to ERCB according to the requirements of *Directive 071*.

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68	DIRECTIVE 56 - ENERGY DEVELOPMENT APPLICATIONS AND SCHEDULES	Page 6-28 Section 6.10.3	**Section 6** **Pipeline Licence Applications** **6.10.3 Step 3: Emergency Response Planning** **91)** The licensee must keep a copy of the corporate-level ERP or, if required, the specific ERP on file for review upon request. It is not required for inclusion in the audit submission. a) The licensee must include in the audit submission a statement confirming that it has an approved corporate plan and/or that a site-specific plan will be approved prior to operations.	A licensee must keep a copy of the corporate level ERP for review and statement in audit submission report confirming approved Corporate plan prior to operations.
69	DIRECTIVE 66 - REQUIREMENTS AND PROCEDURES FOR PIPELINES	Page 30 Section 49	**Appendix 1 Operational Deficiencies** **Section 49. Emergency Procedures Manual** a) Emergency procedures manual unsatisfactory. b) No approved site specific ERP where required c) Safety equipment specified in ERP not installed d) Copy or ERP not readily available. e) ERP manual not updated yearly, and exercises not held or details not documented. f) Operator on-site representative not familiar with ERP. g) Operator not communicating with residents in EPZ.	Deficiencies criteria is based on *Directive 019: ERCB Compliance Assurance*.
70	DIRECTIVE 77 - PIPELINE REQUIREMENTS AND REFERENCE TOOLS	Page A-13 Section 5	**5 Adoption of CSA Z662, Annex N, as Mandatory** **5.2** A pipeline licensee must develop, implement, and document for all its pipelines a pipeline **integrity management program** that complies with the latest edition of CSA Z662, Annex N.	A pipeline licensee must develop its pipeline integrity management program in accordance with the latest version of *CSA Z662*.
71	Directive 71 - Emergency Preparedness and Response Requirements	Page 5 Section 1.2	**Section 1.2** The ERCB has adopted the most recent edition of the CSA Z731-03 Emergency Preparedness and Response and expects it to be used by the petroleum industry in conjunction with Directive 71 for the development of emergency preparedness and response programs.	The ERCB expects the use of *CSA Z731-03* in conjunction with *Directive 071* for the development of emergency preparedness and response programs.
72	Directive 71 - Emergency Preparedness and Response Requirements	Page 10-12,15,20,28,33,40, 43,45,47,48,62 Section 2,3,4,5,7,8,10,11,12,13,14,16	2. Corporate –level ERP Requirements 3. Emergency Planning and Response Zones 4. Public and Local authority Involvement in Emergency Preparedness and Response 5. Common Requirements for ERPs 7. Sour Operations 8. ERPs for HVP Pipelines 10. Spill Cooperative Response Plans 11. Corporate-level ERPs 12. Emergency Planning and Response Zones 13. Public and Local Authority involvement in Emergency Preparedness and Response 14. Common Requirements for ERPs 16. Spill Cooperative Response Plans	See detailed comparison matrix.

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73	Directive 71 - Emergency Preparedness and Response Requirements			
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75	Directive 71 - Emergency Preparedness and Response Requirements			
76	Directive 71 - Emergency Preparedness and Response Requirements			

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77	CSA Z662 -11 OIL AND GAS PIPELINE SYSTEMS	Page 1 Section 1.1	**1 Scope** **1.1** This Standard covers the design, construction, operation, and maintenance of oil and gas industry pipeline systems that convey a) Liquid hydrocarbons, including crude oil, multiphase fluids, condensate, liquid petroleum products, natural gas liquids, and liquefied petroleum gas; b) Oilfield water; c) Oilfield steam; d) Carbon dioxide used in oilfield enhanced recovery schemes; or e) Gas	This Standard covers the design, construction, operation and maintenance of oil and gas industry pipeline systems that convey crude oil, multiphase fluids, condensate, liquid petroleum products, natural gas liquids, liquefied petroleum gas, oilfield water, oilfield steam, carbon dioxide used in oilfield enhanced recovery schemes or gas.
78 79	CSA Z662 -11 OIL AND GAS PIPELINE SYSTEMS	Page 31 Section 3	**3. Safety and Loss management systems, integrity management programs, and engineering assessments for oil and gas industry pipeline systems** **3.1 Safety and loss management system** **3.1.1** Operating companies shall develop, implement, and maintain a documented safety and loss management system for the pipeline system that provides for the protection of people, the environment and property. **3.1.2** The safety and loss management system shall include the following elements: a)Clearly articulated policy and leadership commitment; b) An organizational structure with well- defined responsibilities and authorities that supports the effective implementation of the safety and loss management system; c) A process for the management of resources, including: i. The establishment of competency requirements; ii. An effective training program; and iii. Contractor selection and performance monitoring d) A communication plan that supports the effective implementation and operation of the safety and loss management system; e) A document and records management process for the effective operation of the safety and loss management system; f) Operational controls including the development of procedures for hazard identification and risk management, design and material selection, construction, operations and maintenance, pipeline system integrity management and security management; g) A management of change process; and h) A continual improvement process including i. Performance monitoring for the ongoing assessment of conformance with the requirements of the safety and loss management system, and the mechanisms for taking corrective and preventative measures in the event of a non-conformance; ii. Development of measureable objectives and targets; and iii. Periodic audits and reviews to evaluate the effectiveness of the safety and loss management system in achieving objectives and targets.	*CSA Z662* requires operating companies to develop, implement and maintain a safety and loss management system for the pipeline system that provides for the protection of people, the environment and property. It includes: a) clear policy and leadership commitment, b) an organizational structure with well-defined responsibilities, c) a process for the resource management, d) a communication plan, e) a records management process for effective operation of the safety and loss management system including procedures for hazard identification, etc..., f) operational controls, g) a management of change process, h) a continuous improvement process.

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80	CSA Z731-03 EMERGENCY PREPAREDNESS AND RESPONSE REQUIREMENTS FOR THE PETROLEUM INDUSTRY	Dir-071 Page 5 Section 1 CSA Z731 Page 6, 10,15,18	Directive 71 references CSA Z731-03 and "expects" it to be used in conjunction with Dir 71 Organization and Data Collection Emergency Response Administration Informative Annexes	*CSA Z731-03* adopted by the ERCB and expects to be used in conjunction with *Directive 071*.
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1	**BRITISH COLUMBIA**			
2	**Source**		**DIRECT QUOTE**	**MAIN POINT**
3	**EMERGENCY PROGRAM ACT - BC**	Page 5-6 Section 5	**Part 2** **Ministerial orders** **5** The minister may, by order, do one or more of the following: (d) require a person to develop plans and programs in cooperation with one or more local authorities, designated ministries and government corporations and agencies to remedy, alleviate or meet any emergency that might arise from any hazard to persons or property and that is or may be created by (i) the person engaging in any operation (ii) the person utilizing any process, (iii) the person using property in any manner, or (iv) any condition that exists or may exist on the person's land.	The Act gives the Minister power to order the development of plans and programs to remedy, alleviate or meet any emergency that may arise.
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7	**Emergency Program Management Regulation**	Page 4-5 Schedule (1)	**Schedule 1** **Ministers Responsible for Coordinating** **Government Response to Specified Hazards** Explosions and Emissions – gas and gas leaks (pipeline) – Environment, Lands and Parks Minister Hazardous materials- hazardous spills – Environment, Lands and Parks Minister	Regulation defines the Minister's responsibilities.
8	**Local Authority Emergency Management Regulation**	Page 1 Section (2)	**Local emergency plans** **2** (1) A local authority must reflect in the local emergency plan prepared by it under section 6(2) of the Act (a) the potential emergencies and disasters that could affect all or any part of the jurisdictional area for which the local authority has responsibility, and (b) the local authority's assessment of the relative risk of occurrence and the potential impact on people and property of the emergencies or disaster referred to under paragraph (a)	Regulation outlines local authority responsibilities.
9		Page 2-3 Section (4)	**Duties of a local authority** **4** Each municipal council and each board of a regional district that qualifies as a local authority under section 1(1) of the Act must on the request of and within the time required by the minister, submit to the minister (a) the local emergency plan as prepared under section 692) of the Act and updated under section 2(3) (a) of this regulation, (b) the schedule and content of any emergency training or exercise program, and (c) any other emergency prevention, preparedness, response or recovery information that the minister considers to assist the minister in preparing or establishing procedures required for the prompt and efficient implementation of plans and programs to meet emergencies and disaster,	On Minister's request, each municipal council and board must submit local emergency plan, schedule of emergency training programs to assist the Minister in preparing plans and to meet emergencies and disaster.

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12	**Oil and Gas Activities Act (Pipeline Act)**	Page 10-11 Section (9)	**Application of section 8 to pipelines under jurisdiction of Canada** **9** (2) The commission's powers under section 8 do not include the power to issue approval with respect to a pipeline subject to the National Energy Board Act (Canada). (3) Despite subsection (2), The Lieutenant Governor in Council may, by regulation, extend the commission's powers under section 8 to include the power to issue an approval under one or more specified enactments with respect to a pipeline referred to in subsection (2).	The Act excludes pipelines that are regulated by the NEB, but allows for exceptions.
13		Page 8 Section (4)	**Part 2- Administration** **Division 1 – Oil and Gas Commission** **Purposes** **4** The purpose of the commission include the following: (a) to regulate oil and gas activities in British Columbia in a manner that (iii) ensures safe and efficient practices	The Act defines the purpose including ensuring safe and efficient practices.

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14	Oil and Gas Activities Act (Pipeline Act)			
15	Oil and Gas Activities Act (Pipeline Act)	Page 53 Section (99)	**Part 9 – Regulations** **Division 1- Regulations of the Lieutenant Governor in Council** **General** **99 (1)** The Lieutenant Governor in Council may make regulations as follows: (a) prescribing activities for the purposes of the definition of "Oil and gas activity" in section 1(2); (h) respecting the disclosure of records, reports and plans referred to in section 38;	The Lieutenant Governor has powers to make regulations for the disclosure of records, reports and plans as referred to in S*ection-38*.
16	Oil and Gas Activities Act (Pipeline Act)	Page 61 Section (112)	**Regulations** **Division 2 Regulations of the Board** **General** **112 (1)** The board may make regulations as follows: (a) adopting by reference, in whole or in part and with any changes the board considers necessary, any regulation, code, standard or rule (i) enacted under a law of another jurisdiction, including foreign jurisdiction, or (ii) set by another provincial, national or international body or any other code, standard or rule making body, As for the regulation, code, standard or rule stands at a specific date, as it stands at the time of adoption or as amended from time to time. (d.1) respecting emergency response programs and response contingency plans for the purposes of section 38(1) (b), including, without limiting this, regulations requiring the programs or plans to include requirements with respect to the training of persons who will carry out the programs or prepare the plans and consultations that must be carried out with respect to the programs or plans;	The Board has power to make regulations by adopting by reference any regulation, code, standard or rule.
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19	Oil and Gas Activities Act (Pipeline Act)	Page 24 Section (37)	**Spillage** **37 (1)** A permit holder and a person carrying out an oil and Gas activity must (a) prevent spillage, and (b) promptly report to the commission any damage or malfunction likely to cause spillage that could be a risk to public safety or the environment. (2) If spillage occurs, a permit holder or person carrying out an oil and gas activity must promptly do all of the following: (a) remedy the cause or source of the spillage; (b) contain and eliminate the spillage; (c) remediate any land or body of water affected by the spillage; (d) if the spillage is a risk to public safety or the environment, report to the commission (i) the location and severity of the spillage, and (ii) any damage or malfunction causing or contributing to the spillage.	A permit holder must a) prevent spillage b) report to commission any damage likely to cause spillage c) remedy cause of spillage d) contain or eliminate spillage e) spill report to commission f) location, severity g) any damage or malfunction contributing to spillage

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20	**Oil and Gas Activities Act (Pipeline Act)**	Page 24 Section (38)	**Records, reports and plans** **38 (1)** A permit holder must do all of the following: (b) prepare and maintain an emergency response program and response contingency plan satisfactory to the commission or as prescribed by regulation, if any;	A permit holder must prepare and maintain an emergency response program and response contingency plan.
21	**Oil and Gas Activities Act (Pipeline Act)**			
22	**Oil and Gas Activities Act (Pipeline Act)**	Page 36 Section 57	**Division 3 – Inspections and Audits** **Entry and inspection or audit** **57** (2) For any purpose related to the administration or enforcement of the Act, the regulations, a permit or an authorization, an official may enter, at any reasonable time, on land or premises, other than a dwelling, if the official has reasonable grounds to believe that (a) the land or premises is the site of an oil and gas activity or a related activity that is regulated under the Act or the regulations or is carried on by a person who is required under this Act to hold a permit or an authorization to carry out that activity, or (b) records concerning the activities referred in paragraph (a) are kept on the land or premises (4) An official who enters on land or premises under this section may (a) **inspect or audit anything** or any activity that is reasonably related to the purpose of the inspection or audit,	An official may enter the land or premises for the enforcement of the Act, regulations, a permit or an authorization to inspect or audit anything.
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24	Oil and Gas Activities Act (Pipeline Act)	Page 17 Section (26)	**Actions by commission respecting permit** **26 (1)**The commission may (b) **suspend a permit** or permission specified in a permit, (c) cancel a permit or permission specified in a permit, (2) Without limiting the authority of the commission under subsection (1), the commission may make a decision under subsection 91) if the applicant or permit holder does any of the following: (a) contravenes or has contravened (i) this Act, the regulations, a permit, and authorization or an order issued under this Act, or (ii) the petroleum and Natural Gas Act or regulations made under that Act,	The commission may suspend or cancel a permit if the permit holder contravenes this Act, the regulations, permit and authorization issued under this Act or Petroleum and Natural Gas Act or regulations made under that Act.
25	Oil and Gas Activities Act (Pipeline Act)	Page 14 Section (21)	**Part 3 – Oil and Gas Activities** **Division 1 – Permits** **Permit required** **21** Subject of section 23, a person must not carry out an oil and gas activity unless a) either (i) the person holds a permit that gives the person permission to carry out that oil and gas activity, or (ii) the person is required to carry out that oil and gas activity by an order issued under section 49, and b) the person carries out the oil and gas activity in compliance with (i) this Act and the regulations (ii) a permit issued to the person, if any, and (iii) an order issued to the person, if any.	A permit is required to carry out an oil and gas activity and compliance with this Act and regulations.
26	Oil and Gas Activities Act (Pipeline Act)	Page (30-31) Section (49)	**Part 5 – Compliance and Enforcement** **Division 2 – Orders** **Order Issued by official** **49 (1)** An official may, in writing, issue to a person carrying out an oil and gas activity or a related activity an order under this section with respect to those activities or any of the person's obligations under the Act or the regulations or the person's permit or authorization, if any, **if, in the opinion of the official,** (a) the **person fails to comply with the Act,** the regulations, a previous order made under the Act, or the person's permit or authorization, or (b) the order is necessary (i) to mitigate a risk to public safety, (4) Without limiting subsection (3)(b), an order under subsection (1) may specify the following requirements: (d) that a person suspend or resume an oil and gas activity or any aspect of an oil and gas activity. (g) that a person control or prevent the escape of petroleum, natural gas, water, waste or other substances from a well, pipeline or facility; (l) that a person restrict or cease production of petroleum, natural gas or water; (5) Despite subsection (3), if the official referred to in subsection (1) is of the opinion that a person's actions or omissions are of such nature that they are causing, or may imminently cause, serious damage to the environment or that they are a risk to public safety, the order under subsection (1) may be issued orally.	An official may issue an order to a person carrying out an oil and gas activity if, in the opinion of the official, -the person fails to comply with the Act -if the order is necessary -to mitigate a risk to public safety -to suspend or resume oil and gas activity - control or prevent the escape of petroleum, natural gas etc. - restrict or cease production of petroleum if the persons emissions are imminent danger to environment or risk to public safety.
27	Oil and Gas Activities Act (Pipeline Act)	Page 48 Section (82)	**Part 7 – General** **Compliance with orders** **82** A person to whom an order under this Act applies must comply with the order	Compliance with orders is required.

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28	Oil and Gas Activities Act (Pipeline Act)	Page 33 Section (52)	**Part 5 – Compliance and Enforcement** **Division 2 – Orders** **Emergency measures regarding spillage** **52 (1)** An official may, in the case of an emergency, (a) enter on any land or body of water and to the things the official considers necessary to implement and carry out measures to contain and eliminate spillage, and (b) order (i) any permit holder, and (ii) the use of any person's equipment and the operator of the equipment, To assist in the implementation or carrying out of measures to contain and eliminate spillage.	An official may order any permit holder to use any equipment and its operator during emergency and may enter any land or body of water to assist in the implementation or carrying out measures to contain or eliminate spillage.
29	Oil and Gas Activities Act (Pipeline Act)	Page 34 Section (53)	**Control of oil and gas activities** **53 (1)** If in the commissioner's opinion, (a) a permit holder has engaged in a pattern of conduct that shows that the person is unfit to carry out the oil and gas activities permitted by the permit holder's permit, and (b) there is a risk to public safety, the environment or petroleum and natural gas resources, The commission may (c) enter, seize and take control of any well, pipeline facility or storage reservoir together with any associated chattel and fixture and any pertinent records, (d) either discontinue all activity or take over the management and control of the well, pipeline, facility or storage reservoir, (e) take the steps the commission considers necessary (ii) for public safety or to protect the environment, and (f) carry out any other prescribed actions.	The commission may enter, seize and take control of any facility to take necessary steps for public safety, or to protect environment or petroleum or natural resources if, in the opinion of of the commissioner, the permit holder is unable to carry out oil and gas activities as permitted by permit.
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31	Oil and Gas Activities Act (Pipeline Act)	Page 49 Section (86)	**Part 8- Offences and Court Orders** **Offences** **86** (1) A person who contravenes section 21, 35(1), 36(1), 37(1) or (2), 39(3), 40, 61 or 81, or in relation to an order issued under section 49, section 82, commits an offence and is liable on conviction to a fine not exceeding $1 500 000 or to imprisonment for not more than 3 years, or both. (2) A person who contravenes section 35(3) commits an offence and is liable on conviction to a fine not exceeding $1 000 000 or to imprisonment for not more than 2 years, or to both. (3) A person who contravenes section 34, 38(1) or 39(1), or in relation to an order issued under section 53 (2) (a), in section 82, commits an offence and is liable on conviction to a fine not exceeding $500 000 or to imprisonment for not more than one year, or to both. (4) A person who contravenes section 35(2) or 76(1), or in relation to an order issued under a section not referred to in subsections (1) to (3) of this section, section 82, commits an offence and is liable on conviction to a fine not exceeding $100 000. (5) A person who contravenes section 37(3) or 60(1) or (2) commits an offence and is liable on conviction to a fine not exceeding $25 000. (6) The Lieutenant Governor in Council may provide by regulation that (a) a contravention of a regulation is an offence, and (b) a person convicted of an offence for a contravention of a regulation is liable to a fine not exceeding a maximum amount, or to imprisonment, or exceeding a maximum length, or to both.	A person who contravenes this Act is guilty of an offence and is liable to a fine, imprisonment or both.

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32	Oil and Gas Activities Act (Pipeline Act)	Page 37-38 Section (62,63)	**Division 4 – Contraventions and Administrative Penalties** **Contraventions** **62** (1) After giving an opportunity to be heard to a person who is alleged to have contravened a provision of the Act, the regulations, a permit an authorization or an order, the commission may find that the person has contravened the provision **Administrative penalties** **63** 1) If the commission finds that a person has contravened a provision referred to in section 62(1), the commission may impose an administrative penalty on the person in an amount that does not exceed the prescribed amount.	A person who contravenes this Act is guilty of an offence and is liable to a fine, imprisonment or both.
33	Oil and Gas Activities Act (Pipeline Act)	Page 31-32 Section 49	**Part 5 – Compliance and Enforcement** **Division 2 – Orders** **Order Issued by official** **49 (4)** Without limiting subsection (3)(b), an order under subsection (1) may specify the following requirements: (p) that a permit holder arrange for an independent audit of the permit holder's operations and activities and have the auditor's report submitted to the official.	An official may order a permit holder arrange an independent audit of the permit holder's operations and submit the auditor's report to the official.
34	Oil and Gas Activities Act (Pipeline Act)	Page 36 Section 57	**Division 3 – Inspections and Audits** **Entry and inspection or audit** **57** (2) For any purpose related to the administration or enforcement of the Act, the regulations, a permit or an authorization, an official may enter, at any reasonable time, on land or premises, other than a dwelling, if the official has reasonable grounds to believe that (a) the land or premises is the site of an oil and gas activity or a related activity that is regulated under the Act or the regulations or is carried on by a person who is required under this Act to hold a permit or an authorization to carry out that activity, or (b) records concerning the activities referred in paragraph (a) are kept on the land or premises (4) An official who enters on land or premises under this section may (a) inspect or audit anything or any activity that is reasonably related to the purpose of the inspection or audit,	An official may enter the land or premises for the enforcement of the Act, regulations, a permit or an authorization to inspect or audit anything.
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36	**Pipeline and Liquefied Natural Gas Facility Regulation (Sour Pipeline Regulation)**			
37	**Pipeline and Liquefied Natural Gas Facility Regulation (Sour Pipeline Regulation)**	Page 2 Section 3	**Standards** **3** (1) Subject to subsection (2), a pipeline permit holder must not design, construct, operate or maintain any of the following except **in accordance with CSA Z662:** (a) the pipeline that is the subject of the permit;	This regulation requires the permit holder to adopt *CSA Z662* for the design, construction, operation and maintenance of pipeline.
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39	Pipeline and Liquefied Natural Gas Facility Regulation	Page 4 Section 8	**Emergency planning zones and response plans** **8**. If fluids to be transported through a pipeline will contain hydrogen sulphide, the pipeline permit holder, before beginning operation, must (a) calculate an emergency planning zone, (b) prepare an emergency response plan respecting the zone referred to in paragraph (a), (c) submit the plan to the commission, and (d) in the case of an emergency, respond to the emergency in accordance with the plan.	For Sour Service Pipeline, the permit holder must calculate emergency planning zone and prepare ERP and submit to commission.
40	Pipeline and Liquefied Natural Gas Facility Regulation			
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43	Pipeline and Liquefied Natural Gas Facility Regulation			
44	Pipeline and Liquefied Natural Gas Facility Regulation			
45	Pipeline and Liquefied Natural Gas Facility Regulation			
46	Pipeline and Liquefied Natural Gas Facility Regulation			
47	Pipeline and Liquefied Natural Gas Facility Regulation			

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48	Pipeline and Liquefied Natural Gas Facility Regulation	Page 4 Section 7	**Integrity management and damage prevention programs** **7(1)** A pipeline permit holder must not operate a pipeline approved by the permit unless (a) the holder has prepared a pipeline integrity management program for the pipeline that complies with CSA Z662 and Annex N of CSA Z662. (b) the holder has prepared a damage prevention program for the purpose of anticipating and preventing damage to the permit holder's pipeline (c) the pipeline is operated in accordance with the pipeline integrity management program and the damage prevention program (d) the holder is a member of BC One Call.	A permit holder must not operate a pipeline unless the holder has prepared integrity management program for damage prevention that complies with *CSA Z662* and *Annex N*. The holder must also be a member of BC One Call.
49	Pipeline and Liquefied Natural Gas Facility Regulation			
50	B.C. Oil and Gas Commission Emergency Response Plan Requirements	Page 37 Section (8)	**Main Sections** 8. ERP Compliance and Enforcement Programs	To ensure that licensee has approved ERP that meets OGC requirements.
51	B.C. Oil and Gas Commission Emergency Response Plan Requirements			
52	B.C. Oil and Gas Commission Emergency Response Plan Requirements			

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53	B.C. Oil and Gas Commission Emergency Response Plan Requirements			
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68	**B.C. Oil and Gas Commission Emergency Response Plan Requirements**			
69	**B.C. Oil and Gas Commission Emergency Response Plan Requirements**			
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71	**B.C. Oil and Gas Commission Emergency Response Plan Requirements**	Page 1 ,2 Section (1)	**1. Introduction** This guide provides the minimum British Columbia Oil and gas Commission emergency preparedness and response requirements for the upstream petroleum industry and adopts the current edition of CSA Standard CAN/CSA Z-731. **1.2 Oil and Gas Commission Guidelines** The OGC is using the Alberta Energy and Utilities Board's, Guide 71 as the framework for OGC Guidelines for Emergency Response Plans, with revisions to take into account legislation requirements in British Columbia.	The Oil and Gas Commission (OGC) references *CSA Z731-03* and uses ERCB *Directive 071* as the framework for Emergency Response Plans.
72	**B.C. Oil and Gas Commission Emergency Response Plan Requirements**	Page 3, 4,5,6,7,13 ,18,32,34 Section (1,2,3,4,5,7)	**Main Sections** 1.4 Regulatory Requirements for ERPs 1.4.1 Corporate-Level ERPs 1.4.3 Specific ERPs for Sour Production Facilities 1.4.4 Specific ERPs for HVP Pipelines 1.4.5 Spill Response Contingency Plans 2. Initial Planning Requirements for Specific ERP's 2.1 Determination of the Emergency Planning Zone (EPZ) 2.2 Public and Local Government Involvement in Emergency Preparedness and Response 3. Corporate-Level ERP's 3.1 Requirements 4. Sour Gas and Sour Multiphase ERP's 5. High Vapor Pressure (HVP) Pipeline ERP Requirements 7. Spill Response Contingency Plans	See detailed comparison matrix.

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73	B.C. Oil and Gas Commission Emergency Response Plan Requirements	Page 37 Section (8)	**Main Sections** 8. ERP Compliance and Enforcement Programs	
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75	B.C. Oil and Gas Commission Emergency Response Plan Requirements			
76	B.C. Oil and Gas Commission Emergency Response Plan Requirements			

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77	CSA Z662 -11 OIL AND GAS PIPELINE SYSTEMS	Page 1 Section 1.1	**1 Scope** **1.1** This Standard covers the design, construction, operation, and maintenance of oil and gas industry pipeline systems that convey a) Liquid hydrocarbons, including crude oil, multiphase fluids, condensate, liquid petroleum products, natural gas liquids, and liquefied petroleum gas; b) Oilfield water; c) Oilfield steam; d) Carbon dioxide used in oilfield enhanced recovery schemes; or e) Gas	This Standard covers the design, construction, operation and maintenance of oil and gas industry pipeline systems that convey crude oil, multiphase fluids, condensate, liquid petroleum products, natural gas liquids, liquefied petroleum gas, oilfield water, oilfield steam, carbon dioxide used in oilfield enhanced recovery schemes and gas.
78 79	CSA Z662 -11 OIL AND GAS PIPELINE SYSTEMS	Page 31 Section 3	**3. Safety and Loss management systems, integrity management programs, and engineering assessments for oil and gas industry pipeline systems** **3.1 Safety and loss management system** **3.1.1** Operating companies shall develop, implement, and maintain a documented safety and loss management system for the pipeline system that provides for the protection of people, the environment and property. **3.1.2** The safety and loss management system shall include the following elements: Clearly articulated policy and leadership commitment; a) An organizational structure with well- defined responsibilities and authorities that supports the effective implementation of the safety and loss management system; b) A process for the management of resources, including: i. The establishment of competency requirements; ii. An effective training program; and iii. Contractor selection and performance monitoring c) A communication plan that supports the effective implementation and operation of the safety and loss management system; d) A document and records management process for the effective operation of the safety and loss management system; e) A document and records management process for the effective operation of the safety and loss management system; f) Operational controls including the development of procedures for hazard identification and risk management, design and material selection, construction, operations and maintenance, pipeline system integrity management and security management; g) A management of change process; and h) A continual improvement process including i. Performance monitoring for the ongoing assessment of conformance with the requirements of the safety and loss management system, and the mechanisms for taking corrective and preventative measures in the event of a non-conformance; ii. Development of measureable objectives and targets; and iii. Periodic audits and reviews to evaluate the effectiveness of the safety and loss management system in achieving objectives and targets.	*CSA Z662* requires operating companies to develop, implement and maintain a safety and loss management system for the pipeline system that provides for the protection of people, the environment and property. It includes: a) clear policy and leadership commitment, b) an organizational structure with well-defined responsibilities, c) a process for the resource management, d) a communication plan, e) a records management process for effective operation of the safety and loss management system including procedures for hazard identification, etc..., f) operational controls, g) a management of change process, h) a continuous improvement process.

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80	CSA Z731-03 EMERGENCY PREPAREDNESS AND RESPONSE REQUIREMENTS FOR THE PETROLEUM INDUSTRY			
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1	**SASKATCHEWAN**			
2	**Source**		**DIRECT QUOTE**	**MAIN POINT**
3	**The Emergency Planning Act**	Page 8 Section 13	**EMERGENCY PLANNING** **Minister's powers and duties** **13(i)** The minister may: i) require any person: who is engaged or may be engaged in any operations: i. who is utilizing or may be utilizing any process; ii. who is using any property in any matter; or iii. on whose real property there exists or may exist any condition; that is or may create a hazard to persons or property, to develop a plan and program in conjunction with local authorities to remedy or alleviate the hazard and to meet any emergency that may arise from the hazard.	The Act gives the Minister power to require the development of a plan and program to remedy or alleviate the hazard and to meet any emergency that may arise from the hazard.
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12	**Oil and Gas Conservation Act**	Page 8 Section (6)	**PART 1** **Administration** **Jurisdiction and authority of minister** **6** For the purpose of effectuating the purposes of this Act, the minister has jurisdiction and authority over all persons and property, public and private, and may make or cause to be made inquiries and investigations onto any matter or thing in relation to the drilling for, and the resources, occurrence, production, transportation, distribution, disposition and processing of, oil or gas or products derived therefrom in the province at such places and at such times and in such manner as he may deem advisable, and may make or issue orders and take any other action he deems advisable, and may make or issue orders to take any other action he deems necessary or expedient for or incidental to the performance, execution and carrying out of any duty, function or power imposed or conferred upon him by this Act.	The Act defines the Minister's authority.
13	**The Pipelines Act 1998**	Page 9 Section (17)	**PART IV** **Operation of Pipelines** **Operating standards** **17** Every person who operates a pipeline shall operate the pipeline so as not to endanger the public health or safety of the environment.	The Act defines the operating standards as not to endanger the public health or safety of the environment.

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14	The Pipelines Act 1998	Page 4&5 Section (2&3)	**Chapter P-12.1** **An Act respecting Pipelines** **Part 1** **Preliminary Matters** **Interpretation** **2** In this Act: (d) "flow line" means a pipeline connecting a well head with an oil battery facility, a fluid injection facility or a gas compressor or processing facility, and includes a pipe or system of pipes for the transportation of fluids within any of those facilities; **Application of Act3(1)** The Crown is bound by this Act. (2) Subject to subsection 6(2), this Act does not apply to: (a) a pipeline that is constructed, altered, operated or abandoned pursuant to the National Energy Board Act (Canada) or the operation of which is being discontinued pursuant to that Act; (b) a pipeline for the distribution of gas that is being constructed, altered, operated or abandoned pursuant to The SaskEnergy Act or the operation of which is being discontinued to that Act; (c) a refining or marketing pipeline that is situated wholly within plant property;	The Act excludes flow lines, NEB lines and distribution pipelines under the SaskEnergy Act.
15	The Pipelines Act 1998	Page 12 Section (25)	**Regulations** **25 (1) The Lieutenant Governor in Council may make regulations:** g) prescribing the specifications and standards for the construction, alteration, operation and abandonment of pipelines and the discontinuation of the operation of pipelines; h) prescribing measures for the protection of life, property or the environment to be taken in the construction, alteration, operation and abandonment of pipelines and the discontinuation of the operation of pipelines; n) requiring the reporting of pipeline ruptures, spills and fires and governing the reporting procedures;	The Lieutenat Governor in Council may make regulations for the construction, alteration, operation and abandonment of pipelines for the protection of life, property or environment requiring reporting of pipeline incidents.
16	The Pipelines Act 1998	Page 13 Section (25.1)	**PART V** **General** **Regulations respecting security** **25.1** (1) In this section, ”terrorist activity” means a terrorist activity defined in the Criminal Code. 2) For the purposes of addressing security with respect to a terrorist activity or a threat of terrorist activity, the Lieutenant Governor in Council may make regulations: a) prescribing the circumstances in which the minister may order the shutdown of a pipeline; b) respecting the security measures that the owner of a pipeline must undertake with respect to that pipeline and requiring those security measures to be taken;	The Lieutenant Governor in Council may make regulations for the purposes of addressing security with respect to a terrorist activity or threat and may order the shutdown of a pipeline.
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19	The Pipelines Act 1998			

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20	The Pipelines Act 1998	Page 11 Section 22(1)	**PART V** **General** **Information required by the ministry** **22(1**) Every licence holder, and every person who constructs or operates a pipeline for which a licence is not required, must provide the ministry with any information that, in the minister's opinion, is required for the administration of the Act or the regulations.	The Act requires the pipeline operators to submit required information to the ministry.
21	Oil and Gas Conservation Act	Page 5 Section (4,5)	**Well or facility housekeeping** **62(5)** If an event mentioned in subsection 99(1) occurs, the operator shall: a) implement the operator's emergency response plan and take immediate steps to contain and clean up the spilled material. **Notification of spills, fires, etc.** **99** (1) The operator of a well, facility, pipeline or flow line shall promptly report to the minister the particulars of the following: a) a fire; b) a blow-out; c) a break in, contact damage to or a leak from a pipeline or flow line, other than where notification is made pursuant to section 20 of the Pipelines regulations, 2000 and a written report is submitted pursuant to section 21 of the Pipelines Regulations, 2000; d) an escape or release of a substance that contains hydrogen sulphide in a concentration equal to or greater than 1000 parts per million or 1.0 moles H2S/kilomole as measured at the edge of the lease or property boundary;	In the case of escape or release of a sour substance, break, damage or leak from a pipeline, the operator must implement its ERP and promptly report to the minister.
22	Oil and Gas Conservation Act	Page 12 Section 7.31	**Inspections** **7.31**(3) Subject to subsection7.32(4), the member, officer or employee of the board may do all or any of the following things in the course of making an inquiry or conducting an inspection or examination: a) enter any well, plant, facility or any place at which oil or gas is refined, produced, handled, processed or treated or any place used in connection with a well, plant, facility or place at which oil or gas is refined, produced, handled, processed or treated;	The board's member or employee may enter any oil or gas facility for making an enquiry or conducting an inspection or examination.
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24	**The Pipelines Act 1998**	Page 5 Section (4,5)	**PART II** **Licences** Application of Part 4 This Part does not apply to flow lines. **Licence** **5**.No person shall construct, alter, operate or abandon a pipeline or discontinue the operation of a pipeline unless that person holds a licence authorizing the construction, alteration, operation, abandonment or discontinuation.	A licence is required for the construction, alteration or abandonment of a pipeline.
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26	**The Oil and Gas Conservation Act**	Page 29 Section 17.01	**Minister's orders for the protection of environment** **17.01 (1)** Notwithstanding any licence, permit or approval, if in the minister's opinion, of is necessary to do so for the purposes of public safety or the safety of any person, for the protection of property or the environment or for any other prescribed purpose, the minister may order any person to: a) **suspend the operation of a**ny well, structure test hole, oil shale core hole, flow line or facility in the manner and within the time specified in the order; and b) abandon, restore, remediate or reclaim any well, structure test hole, oil shale core hole, flow line, ….	The minister may order, for the purposes of public safety, protection of property or environment, to suspend the operation of any well, structure test hole, oil shale core hole, flow line or facility and abandon, restore, remediate or reclaim the same.
27	**The Oil and Gas Conservation Act**	Page 31 Section 17.05	**Power to take immediate action** 17.04 **Inspections** **17.05** 2) The minister may make inquiries and conduct inspections and examinations respecting the business and activities of any person governed by this Act.	The minister has powers to make inquiries or inspections of any oil and gas business activities.

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28	**The Oil and Gas Conservation Act**			
29	**The Oil and Gas Conservation Act**			
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31	**The Pipelines Act 1998**	Page 14 Section (27,28)	**PART V** **General** **Offences** **Offences re disturbance of soil, damage to or obstruction of construction, etc., of pipeline** **27** Every person who: a) contravenes any provision of section 20; or b) willfully does any damage to, or obstructs or hinders the construction, operation or maintenance of, any pipeline for which a licence has been issued; is guilty of an offence and is liable on summary conviction to a fine not exceeding $5,000 and in each case of a continuing offence to a further fine not exceeding **$5,000** for each day or part of a day during which the offence continues. **Contraventions of Act, regulations or orders** **28**(1) Every person who contravenes any provision of this Act, for which no other penalty is provided, or of any regulation or order made pursuant to this Act is guilty of an offence and is liable on summary conviction to a fine not exceeding**$50,000** and in the case of a continuing offence to a further fine not exceeding $50,000 for each day or part of a day during which the offence continues.	The Act defines the maximum fine limits for the contravention of any provision of this Act.

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34	**Oil and Gas Conservation Act**	Page 8 Section 6 Page 14 Section 17.32	**PART 1** **Administration** **Jurisdiction and authority of minister** **6** For the purpose of effectuating the purposes of this Act, the minister has jurisdiction and authority over all persons and property, public and private, and may **make or cause to be made inquiries and investigations** onto any matter or thing in relation to the drilling for, and the resources, occurrence, production, transportation, distribution, disposition and processing of, oil or gas or products derived therefrom in the province at such places and at such times and in such manner as he may deem advisable, and may make or issue orders and take any other action he deems advisable, and may make or issue orders to take any other action he deems necessary or expedient for or incidental to the performance, execution and carrying out of any duty, function or power imposed or conferred upon him by this Act. **Investigations** **7.32(1)** If a justice or a provincial court judge is satisfied by information under oath that there is reasonable grounds to believe that an offence against this Act has occurred and that evidence of that offence is likely to be found, the justice or the provincial court judge may issue a warrant to do all or any of the following: ….	The minister has jurisdiction and authority and may make regulations relating to any oil and gas activities in the province and may make or issue orders to take any action he deems necessary or expedient for, or incidental to the performance, execution and carrying out of any duty, function or power imposed or conferred upon him by this Act.
35	**Oil and Gas Conservation Act**			

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36	**Pipelines Regulations, 2000**	Page 6 Section 12(1)	**Requirements re design, etc.** **12(1)** The minimum requirements for the design, construction, testing and operation, maintenance and repair of pipelines shall be in accordance with the **most recent version of CSA Standard Z662,** Oil and Gas Pipeline Systems, unless otherwise approved by the minister.	This regulation requires the design, construction, testing and operation, maintenance and repair of pipeline according to the most recent version of *CSA Z662*.
37	**Pipelines Regulations, 2000**	Page 6 Section 12(1)	**Requirements re design, etc.** **12(1)** The minimum requirements for the design, construction, testing and operation, maintenance and repair of pipelines shall be in accordance with the **most recent version of CSA Standard Z662,** Oil and Gas Pipeline Systems, unless otherwise approved by the minister.	This regulation requires the design, construction, testing and operation, maintenance and repair of pipeline according to the most recent version of *CSA Z662*.
38	**Pipelines Regulations, 2000**	Page 10 Section (3)	**Application of regulations** **3** these regulations do not apply to: a) a pipeline that is being constructed, altered, operated or abandoned pursuant to the **National Energy Board Act (Canada)** or the operation of which is being discontinued pursuant to that Act;	The Act excludes pipelines that are regulated by the *National Energy Board Act (Canada)*.

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39	Pipelines Regulations, 2000	Page 7 Section 14	**Emergency procedures manual** **14** Every operator of a pipeline for which a licence has been issued shall: a) prepare and maintain an emergency procedures manual that sets out the action to be taken and the agencies and persons to be contacted in the event of a rupture, break, leak or fire; and b) ensure that the emergency procedures manual is up to date and readily accessible to operating and maintenance personnel.	Every licenced operator of a pipeline shall prepare and update an emergency procedure manual readily accessible to operating and maintenance personnel.
40	Pipelines Regulations, 2000			
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43	Pipelines Regulations, 2000	Page 8,9 Section 20	**Notification of fires, etc.** **20** (1) Every operator shall immediately notify the department, by the most expeditious method, of the occurrence of any of the following: a) a fire; b) the escape or release of more than 28,000 cubic metres of natural gas; c) contact damage to a pipeline; d) a break, leak, malfunction of any equipment or worker error that results in the escape or release of: (i) oil, saltwater, condensate or other product; (ii) natural gas within a road or railway right of way or within 150 metres of any dwelling; or (iii) natural gas containing hydrogen sulphide. 2) Where an incident mentioned in subsection (1) occurs, the operator **shall take immediate action in accordance with the emergency procedures manual.**	Immediate reporting by the operator is required in the case of fire, release of more than 28 000 cubic metres of natural gas, a break, leak or malfunctioning of any equipment. This also requires immediate action in accordance with the emergency procedures manual.
44	Pipelines Regulations, 2000	Page 9 Section 21(1,3)	**Written reports** **21**(1) Every operator shall, within 30 days after notifying the department pursuant to section 20, submit a written report to the department containing: a) **the date and time and exact location where the incident occurred;** b) the action taken by the operating personnel, including details of any remedial clean-up steps taken, in progress and proposed; c) the human injuries or fatalities; d) a description of any environmental damage; e) a description of the quantities of substances spilled, lost or burnt and a further estimate of any subsequent recovery; f) a description of the cause of the incident, including any related technical report; and g) a description of the preventative action the operator intends to take to prevent a similar future occurrence. **3)**Every six months an operator shall submit, for the previous six month period, a written summary report to the department respecting every incident involving a pipeline rupture, break or leak for which the department was not required to be immediately notified pursuant to section 20.	A written report from every operator is required by the department within 30 days of the incident with incident details, action taken for clean up, human injuries, environmental damage, cause of incident and future preventive action. Incident summary report after every 6 months is also required by the department.
45	Pipelines Regulations, 2000			
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77	CSA Z662 -11 OIL AND GAS PIPELINE SYSTEMS	Page 1 Section 1.1	**1 Scope** **1.1** This Standard covers the design, construction, operation, and maintenance of oil and gas industry pipeline systems that convey a) Liquid hydrocarbons, including crude oil, multiphase fluids, condensate, liquid petroleum products, natural gas liquids, and liquefied petroleum gas; b) Oilfield water; c) Oilfield steam; d) Carbon dioxide used in oilfield enhanced recovery schemes; or e) Gas	This Standard covers the design, construction, operation and maintenance of oil and gas industry pipeline systems that convey crude oil, multiphase fluids, condensate, liquid petroleum products, natural gas liquids, liquefied petroleum gas, oilfield water, oilfield steam, carbon dioxide used in oilfield enhanced recovery schemes and gas.
78 79	CSA Z662 -11 OIL AND GAS PIPELINE SYSTEMS	Page 31 Section 3	**3. Safety and Loss management systems, integrity management programs, and engineering assessments for oil and gas industry pipeline systems** **3.1 Safety and loss management system** **3.1.1** Operating companies shall develop, implement, and maintain a documented safety and loss management system for the pipeline system that provides for the protection of people, the environment and property. **3.1.2** The safety and loss management system shall include the following elements: Clearly articulated policy and leadership commitment; a) An organizational structure with well- defined responsibilities and authorities that supports the effective implementation of the safety and loss management system; b) A process for the management of resources, including: i. The establishment of competency requirements; ii. An effective training program; and iii. Contractor selection and performance monitoring c) A communication plan that supports the effective implementation and operation of the safety and loss management system; d) A document and records management process for the effective operation of the safety and loss management system; e) A document and records management process for the effective operation of the safety and loss management system; f) Operational controls including the development of procedures for hazard identification and risk management, design and material selection, construction, operations and maintenance, pipeline system integrity management and security management; g) A management of change process; and h) A continual improvement process including i. Performance monitoring for the ongoing assessment of conformance with the requirements of the safety and loss management system, and the mechanisms for taking corrective and preventative measures in the event of a non-conformance; ii. Development of measureable objectives and targets; and iii. Periodic audits and reviews to evaluate the effectiveness of the safety and loss management system in achieving objectives and targets.	*CSA Z662* requires operating companies to develop, implement and maintain a safety and loss management system for the pipeline system that provides for the protection of people, the environment and property. It includes: a) clear policy and leadership commitment, b) an organizational structure with well-defined responsibilities, c) a process for the resource management, d) a communication plan, e) a records management process for effective operation of the safety and loss management system including procedures for hazard identification, etc..., f) operational controls, g) a management of change process, and h) a continuous improvement process.

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3	**The Emergency Management Act**	Page 5 Section 7 Page 4 Section 6(1)	**ORDERS OR REGULATIONS** 7. The Governor in Council may on the recommendation of the Minister make orders or regulations a) respecting the preparation, maintenance ,testing and implementation of emergency management plans; **MINISTERS' RESPONSIBILITIES** 6.(1) The emergency management responsibilities of each minister accountable to Parliament for a government institution are to identify the risks that are within or related to his or her area of responsibility – including those related to critical infrastructure – and do the following in accordance with the policies, programs and other measures established by the Minister: a) prepare emergency management plans in respect of those risks; b) maintain, test and implement those plans; and c) conduct exercises and training in relation to those plans.	The Act makes each minister accountable to Parliament for a government institution, the responsibility to identify risks and prepare, maintain, test, implement and conduct training exercises in relation to those plans.
4	**Federal Policy for Emergency Management**	Page 2 Section 4, 5.1, 5.2 Page 3 Section 7,	**4. AUTHORITY** 4.1 This policy is established under the authority of the Emergency Management Act and applies to all federal institutions. As all ministers have responsibilities in relation to emergency management, this policy is intended to provide deputy heads with direction for the preparation, maintenance, testing, implementation, exercise and training by a federal institution of mandate specific emergency management plans. **5. CONTEXT** 5.1 The Government of Canada has adopted an all-hazards approach to emergency management encompassing four interdependent, but integrated functions: mitigation/prevention, preparedness, response and recovery. Effective emergency management dictates the need for a seamless relationship across all of these management functions. 5.2 Within the respective Minister's area of responsibility, federal institutions are responsible for developing, testing and maintaining mandate-specific emergency management plans and identify risks that are within or related to their area of responsibility, as outlined in the Emergency Management Act. A risk based emergency management cycle should be embedded within a institutions broader integrated planning process. **7. POLICY REQUIREMENTS** 7.1 Under the Emergency Management Act (EMA), the Minister of Public Safety is responsible for exercising leadership relating to emergency management in Canada by coordinating, among federal institutions and in cooperation with the Provinces, Territories and other entities, emergency management activities.	Defines Minister's responsibilities with respect to emergency management.
5	**Federal Emergency Response Plan**	Page 1 Section 1.2	**1.2 PURPOSE** The FERP is designed to harmonize federal emergency response efforts with those of the provinces/territorial governments, non-governmental organizations, and the private sector.	Harmonizes federal emergency response efforts with provinces/territorial governments, non-government organizations and the private sector.

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<tr><td>6</td><td>Federal Emergency Response Plan</td><td>Page 2 Section 1.7</td><td>1.7 INTEGRATED GOVERNMENT OF CANADA RESPONSE
During an integrated Government of Canada response, all involved federal government institutions assist in determining overall objectives, contribute to joint plans, and maximize the use of all available resources. This occurs at the national and regional levels as necessary, based on the scope and nature of the emergency.

An integrated Government of Canada response is required when:
• a province /territory requests federal support to deal with an emergency;
• an emergency affects multiple jurisdictions and/or government institutions and it requires a coordinated response;
• an emergency directly involves federal assets, services, employees, statutory authority or responsibilities, or it affects confidence in the government; or
• an emergency affects other aspects of the national interest.

ANNEX A Appendix A
OVERVIEW OF EMERGENCY SUPPORT FUNCTIONS (ESFS)

<table><tr><td>ESFS</td><td>Minister with Primary Responsibility</td></tr><tr><td>Energy Production and Distribution</td><td>Natural Resources Canada</td></tr></table></td><td>A federal emergency response plan encompassing all involved federal government institutions assigns the Natural Resources Canada Minister to Energy Production and Distribution.</td></tr>
<tr><td>7</td><td rowspan="2">Emergency Management Framework for Canada</td><td>Page 1</td><td>Preamble
The federal, provincial and territorial (FPT) governments joined efforts to produce An Emergency Management Framework for Canada (the Framework), which establishes a common approach for various FPT emergency management initiatives. The Framework aim to enable a consolidation of FPT collaborative work and ensure more coherent, complementary actions among the different FPT governmental initiatives.</td><td>Federal, provincial and territorial governments have a joint emergency management framework for Canada.</td></tr>
<tr><td>8</td><td>Page 6</td><td>PRINCIPLES
Responsibility
Emergency management roles and activities are carried out in a responsible manner at all levels of society in Canada.
Legal and policy frameworks and other arrangements establish guidelines and standards to ensure that due diligence is exercised and accountability is respected in the conduct of emergency management activities, Emergency management responsibilities in Canada are shared by FTP governments and their partners, including individual citizens who have a responsibility to be prepared for disasters and contribute to community resiliency. Provincial and territorial governments have responsibility for emergency management within their respective jurisdictions. The federal government exercises leadership at the national level relating to emergency management responsibilities in its exclusive fields of jurisdiction and on lands and properties under federal responsibility.</td><td></td></tr>
<tr><td>9</td><td>National Strategy and Action Plan for Critical Infrastructure</td><td>Page 6
Section 4.</td><td>4. The Strategy
The Strategy proposes that federal, provincial and territorial governments and critical infrastructure sectors collaborate to strengthen the resiliency of critical infrastructure in Canada.

The strategy recognizes that primary responsibility for strengthening the resiliency of critical infrastructure rests with the owners and operators.

….at the national level, the Strategy classifies critical infrastructure within the 10 sectors listed below:
• Energy and utilities</td><td>Federal, provincial and territorial governments have a national strategy plan for critical infrastructure.</td></tr>
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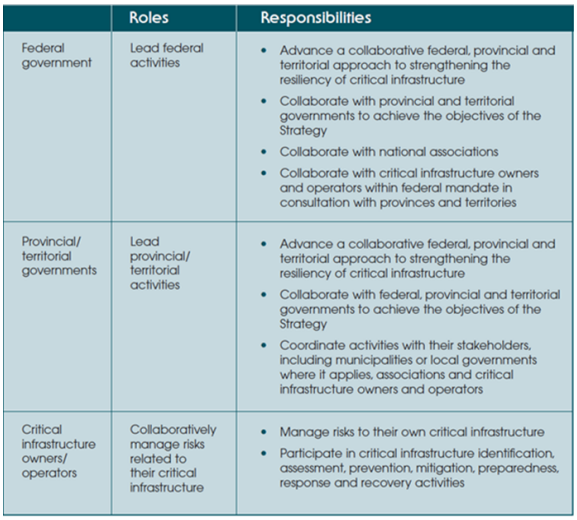
10	Action Plan for Critical Infrastructure	Page 3 Section 2.		The chart describes the roles and responsibilities of the federal, provincial and territorial governments and the critical infrastructure for owners/operators.
11		Page 10 Section 4.	**5. Review** Federal, provincial and territorial governments will work together to monitor the implementation of the Strategy and support the assessment of programs and activities targeted at enhancing the resiliency of critical infrastructure in Canada. It is expected that the collaborative approach established in the Strategy will remain evergreen and strengthen coherency of action among all levels of government and critical infrastructure sectors. The Strategy is to be read in conjunction with the Action Plan for Critical Infrastructure, which will be reviewed three years after launch and every five years thereafter.	Joint strategy of the federal, provincial and territorial governments for coherent action to support the assessment of programs and activities enhancing the resiliency of critical infrastructure in Canada.
12	National Energy Board Act	Page 24,25 Section (29, 30)	**Part III** **Construction and Operation of Pipelines** **General** **29**. (1) No person, other than a company, shall construct or operate a pipeline. (2) Nothing in this section shall be construed to prohibit or prevent any person from operating or improving a pipeline constructed before October 01, 1953, but every such pipeline shall be operated in accordance with this Act. **30 (1)** No company shall operate a pipeline unless (a) there is a **certificate** in force with respect to that pipeline; and (b) leave has been given under this Part to the company to open the pipeline. (2) No company shall operate a pipeline otherwise than in accordance with the terms and conditions of the **certificate** issued with respect thereto. Regulation of Construction, ETC.	The Act requires a certificate and leave to operate a pipeline.
13			**48 (2)** The Board may, with the approval of the Governor in Council, make regulations governing the design, construction, operation and abandonment of a pipeline and providing for the protection of property and the environment and the safety and security of the public and of the company's employees in the construction operation and abandonment of a pipeline.	The Act defines the Board's authority.

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15	Canada Oil and Gas Operations Act	Page 26,27 Section 14.(1)	**REGULATION OF OPERATIONS** **Regulations** **14. (1) The Governor in Council may,** for the purposes of safety and the protection of the environment as well as for the production and conservation of oil and gas resources, **make regulations** (c) authorizing the National Energy Board, or any person, to make such orders as may be specified in the regulations and to exercise such powers and perform such duties as may be necessary for (iii) the design, construction, operation or abandonment of a pipeline within the areas to which this Act applies;	The Governor in Council may make regulations under this Act and authorize NEB or any person to issue order for the design, construction, operation or abandonment of a pipeline for safety and environment protection.
16		Page 7 Section (5.02) Page 12 Section 5.3(1)	**LICENCES AND AUTHORIZATIONS** **Safety of Works and Activities** **5.02** The national Energy board shall, before issuing an authorization for a work or activity referred to in paragraph 5(1)(b), consider the safety of the work or activity by reviewing, in consultation with the Chief Safety Officer, the system as a whole or its components, including its installations, equipment, operating procedures and personnel. **Guidelines and Interpretation Notes** **5.3 (1)** The National Energy Board may issue and publish, in any manner the Board considers appropriate, guidelines and interpretation notes with respect to the application and administration of section 5, 5.1 or 13.02 or any regulations made under section 13.17 or 14.	The Board has authority to review the safety of work or activity, the whole system or its components, including installations, equipment and operating procedures before issuing an authorization.
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22	National Energy Board Act	Page 10 Section 12,13	**Powers of the Board** 11. (1) The Board is a court of record. **Inspection Officers** **12.** (1) The Board has full and exclusive jurisdiction to inquire into, hear and determine any matter (a) where it appears the Board that any person has failed to do any act, matter or thing required to be done by this Act or by any regulation, certificate, licence or permit, or any order or direction made by the Board, or that any person has done or is doing any act, matter or thing **contrary to** or **in contravention of this Act**, or any such regulation, certificate, licence, permit, order or direction; or (b) where it appears to the Board that the circumstances may require the Board, in the **public interest, to make any order** or give any direction, leave sanction or approval that by law it is authorizes to make or give, or with respect to any matter, act or thing that **by this Act** or such regulation, certificate, licence, permit, order or direction **is prohibited,** sanctioned or required to be done **(2)** For the purposes of this Act, the Board has full jurisdiction to hear and determine all matters, whether law or of fact. **13.** The Board May (a) order or require any person to do, forthwith, or within or at any specified time and in any manner prescribed by the Board, any act, matter or thing that such person is or may be required to do under this Act, or any regulation, certificate, licence or permit, or any order or direction made or given under this Act; and (b) **forbid the doing or continuing of any act, matter or thing that is contrary to the Act or** any such regulation, certificate, licence, permit, order or direction.	The Board has full and exclusive jurisdiction to inquire into, hear and determine any matter relating to contravention of this Act, and for public interest make any order which is required to be done by this Act, forbid the doing or continuing of any act, matter or thing that is contrary to the Act.
23		Page 35 Section (51.1)	**51.1 (1)** An inspection officer who is expressly authorized by the Board to make orders under this section may make an order if the inspection officer has reasonable grounds to believe that a hazard to the safety or security of the public or of employees of a company or a detriment to property or the environment is being or will be caused by (a) the construction, operation, maintenance or abandonment of a pipeline, or any part of a pipeline	An inspection officer authorized by the Board may issue order if he believes that construction, operation, maintenance or abandonment of a pipeline is a hazard to the safety of the public or environment.

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24	Canada Oil and Gas Operations Act	Page 6 Section 5(5)	**LICENCES AND AUTHORIZATIONS** **Operating Licences and Authorization for Work** **5** (1) The National Energy Board may, on application made in the form and containing the information fixed by the National Energy Board, and made in the prescribed manner, **issue** **(a) an operating licence**; and (b) an authorization with respect to each work activity proposed to be carried on. (3) An operating licence shall be subject to such requirements as the National Energy Board determines or as may be prescribed and to such fees and deposits as are prescribed. **Safety of Works and Activities** **5.02** The national Energy board shall, before issuing an authorization for a work or activity referred to in paragraph 5(1)(b), consider the safety of the work or activity by reviewing, in in consultation with the Chief Safety Officer, the system as a whole or its components, including its installations, equipment, operating procedures and personnel. **Guidelines and Interpretation Notes** **5.3 (1)** The National Energy Board may issue and publish, in any manner the Board considers appropriate, guidelines and interpretation notes with respect to the application and administration of section 5, 5.1 or 13.02 or any regulations made under section 13.17 or 14.	The Board has authority to issue an operating licence on application made in the prescribed manner and review the safety of work or activity, the whole system or its components, including installations, equipment and operating procedures before issuing an authorization.
25	Canada Oil and Gas Operations Act	Page 6 Section 5(5)	**LICENCES AND AUTHORIZATIONS** **Operating Licences and Authorization for Work** **5 (5)** The National Energy Board **may suspend or revoke an operating licence** or an authorization for failure to comply with, contravention of or default in respect of (d) any applicable regulation	In the case of failure to comply with the Act or contravention, the Board has authority to suspend or revoke an operating licence.
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31	**National Energy Board Act**	Page 36 Section 51.4(1)	**51.4 (1)** Every person who contravenes section 51 or fails to comply with an order under Section 51.1 is guilty of an offence and is liable (a) on summary conviction, to a fine not exceeding one hundred thousand dollars or to imprisonment for a term not exceeding one year or both; or (b) on conviction on indictment, to a **fine not exceeding one million dollars** or to imprisonment for a term not exceeding five years or to both.	The Board defines the maximum limits for fine, imprisonment on contravention or failure to comply with this Act.

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32	National Energy Board Act			
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34	National Energy Board Act	Page 9 Section 11	**Powers of the Board** **11. (3)** The Board has, with respect to attendance, swearing and examination of witnesses, the production and inspection of documents, the enforcement of its orders, the entry on and the **inspection** of property and other matters necessary or proper for the due exercise of its jurisdiction, all such powers, rights and privileges as are vested in a superior court of record.	The Act defines the powers of the Board for the due exercise of its jurisdiction.
35	National Energy Board Act	Page 10 Section 12(1.1)	**12(1.1)** The Board may **inquire** into any accident involving a pipeline……. The construction or operation of which is regulated by the Board and may, at the conclusion of the inquiry, make (a) findings as to the cause of the accident or factors contributing to it; (b) recommendations relating to the prevention of future similar accidents; or Any decision or order that the Board can make.	It is the authority of the Board to inquire into any pipeline accident to make findings for cause and recommendations for future accident prevention.

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36	**Onshore Pipeline Regulations, 1999**	Page 4,5 Section 4,5,6,8	**GENERAL** **4** (1) When a company designs, constructs, operates or abandons a pipeline, or contracts for the provision of those services, the company shall ensure that the **pipeline is designed, constructed, operated or abandoned in accordance with the applicable provisions of** a) these Regulations; b) CSA Z276, if the pipeline transports liquefied natural gas; **d) CSA Z662**, if the pipeline transports liquid of gaseous hydrocarbons **(2)** Without limiting the generality of subsection (1), the company shall ensure that the pipeline is designed, constructed, operated, and abandoned in accordance with the design, specifications, programs, manuals, procedures, measures and plans developed and implemented by the company in accordance with these Regulations. **(3)** If there is an inconsistency between these Regulations and a standard referred to in paragraph (1)(b), (c) or (d), these Regulations prevail to the extent of the inconsistency. **5** If a company is required by these Regulations to develop a design, specification, program, manual, procedure, measure or plan, the Board may order amendments to it if the Board considers it necessary for safety or environmental reasons or if it is in the public interest to do so. **6.** A company shall develop and apply a program to monitor changes in respect of designs, specification, standards or procedures. **8.(1)** Designs, specifications, programs, manuals, procedures, measures or plans for which no standard is set out in these Regulations shall be submitted by a company to the Board for approval (2) The Board shall approve a design, specification, program, manual, procedure, measure or plan if (a) it provides for a level of safety or protection at least equivalent to the level of safety or protection generally provided for by a comparable CSA standard, or by another applicable standard; or (b) in the absence of a comparable CSA or other applicable standard, it provides for a level of safety or protection that is adequate in the circumstances.	A company shall ensure that a pipeline is designed, constructed, operated or abandoned in accordance with these regulations. *CSA Z662* and any other designs, specifications, programs, manuals, procedures, measures or plans for which there is no standard set out in these regulations shall be approved by the Board.
37	**Onshore Pipeline Regulations, 1999**			
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39	**Onshore Pipeline Regulations, 1999**	Page 12 Section 32,33,34	**Emergency Procedures Manual** **32.(1)**A company shall develop, regularly review and update as required, an emergency procedures manual. (2) A company shall submit the emergency procedures manual and any updates that are made to it to the Board. **33.** A company shall establish and maintain a **liaison with the agencies** that may be involved in an **emergency response** on the pipeline and shall consult with them in developing and updating the emergency procedures manual. **34.** A company shall take all reasonable steps to inform all persons who may be associated with an emergency response activity on the pipeline of the practices and procedures to be followed and **make available to them** the relevant information that is consistent with that which is specified in the emergency procedures manual.	A company shall develop, review and update an emergency procedure manual, establish liaison with the agencies involved in emergency response on the pipeline. Practices and procedures followed should be available to all concerned persons.
40	**Onshore Pipeline Regulations, 1999**	Page 11 Section 29	**Maintenance Safety** **29.** (1) If a company contracts for the provision of services in respect to the maintenance of a pipeline, the company shall (a) inform the contractor of all special conditions associated with the maintenance; (b) inform the contractor of all special safety practices and procedures necessitated by the conditions or features specific to the maintenance	The pipeline maintenance contractor should be informed of all special conditions, safety practices and procedures specific to the maintenance.
41	**Onshore Pipeline Regulations, 1999**	Page 12 Section 35	**Continuing Education Program** **35.** A company shall develop a continuing education program for the police, fire departments, medical facilities, other appropriate organizations and agencies and the public residing adjacent to the pipeline to inform them of the location of the pipeline, potential emergency situations involving the pipeline and the safety procedures to be followed in the case of an emergency.	A company shall develop a continuing education program for different departments, public residing adjacent to the pipeline, emergency situations and safety procedure to be followed.
42	**Onshore Pipeline Regulations, 1999**	Page 13 Section 36	**General Operation Requirements** **36**. A company shall (a) maintain **communication facilities** for the safe and efficient operation of the pipeline and for emergency situations;	Regulations require the maintenance of communication facilities for pipeline operation and emergency.

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43	Onshore Pipeline Regulations, 1999	Page 14 Section 39	**SURVEILLANCE AND MONITORING** **39.** A company shall develop a surveillance and monitoring program for the protection of the pipeline, the public and the environment.	Regulations require the development of surveillance and a monitoring program for the protection of pipeline, the public and environment.
44	Onshore Pipeline Regulations, 1999	Page 16 Section 46	**Training Program** **46**. (1) A company shall develop and implement a training program for any employee of the company who is directly involved in the operation of a pipeline. (2) The training program shall instruct the employee on (a) the safety regulations and procedures applicable to the day to day operation of the pipeline; (d) the emergency procedures set out in the manual developed under section 32 and the procedures for the operation of all emergency equipment that the employee could reasonably be expected to use.	A company shall develop and implement a training program for the employee directly involved in the operation for the use of proper procedures for emergency equipment and applicable safety regulations to be followed.
45	Onshore Pipeline Regulations, 1999	Page 16,17 Section 47,48	**Safety Program** **47**. A company shall develop and implement a safety program to anticipate, prevent, manage and mitigate potentially dangerous conditions and exposure to those conditions during all construction, operation and emergency activities. **48.** A company shall develop and implement an environmental protection program to anticipate, prevent, mitigate and manage conditions which have a potential to adversely affect the environment.	A company shall develop and implement a safety and environmental protection program to anticipate, prevent, mitigate and manage conditions that have potential affect on environment.
46	National Energy Board Pipeline Crossing Regulations, Part II		**4. (1)** Every pipeline company shall establish an ongoing **public awareness program** to inform the public of (a) the presence of the pipeline; and (b) the public's responsibilities regarding any construction or installation of a facility and any excavation that might affect the pipeline. (2) Every pipeline company shall assess the effectiveness of its public awareness program on a regular basis and shall maintain a record of the assessment.	Every pipeline company shall establish an ongoing public awareness program and shall assess its effectiveness on a regular basis and maintain record of assessment.
47			**9. (1)** Subject to subsection (2), when a pipeline company receives a request from a facility owner or an excavator to locate its pipes, the pipeline company shall, within three working days after the date of the request, or any longer period agreed to by the pipeline company and the facility owner or excavator (a) inform the facility owner or excavator, in writing, of any special safety practices to be followed while working in the vicinity of its pipes;	A pipeline company shall inform the excavator, on request, about the location of its pipeline and special safety practices to be followed while working near pipeline.

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48	Onshore Pipeline Regulations, 1999	Page 14 Section 40	**Pipeline Integrity** **40.** A company shall develop a pipeline integrity management program.	Regulations require a pipeline company to develop its integrity management program.
49		Page 18 Section 53	**Part 9** **AUDITS AND INSPECTIONS** **General Compliance** **53. (1)** A company shall conduct an audit and an inspection on a regular basis to ensure its pipeline is designed, constructed, operated or abandoned in compliance with (c) these Regulations; and (2) The audit shall document (a) all non-compliance noted; and (b) any corrective action taken or planned to be taken **55. (1)** A company shall regularly conduct an audit of its (b) safety program developed under section 37; (2) The documents prepared following the audit shall include (a) any deficiencies noted; and (b) any corrective action taken or planned to be taken.	Regulations require a company to conduct an audit and inspection on a regular basis to ensure the design, construction, operation and abandonment of pipeline is in compliance with regulations and to check the adequacy of the safety program developed.
50	NEB Expected Elements for Emergency Preparedness and Response Programs		**Regulatory Requirements for Emergency Preparedness and Response Program** 4.0 NEB Regulatory Activities During an NEB Audit, inspection or other regulatory activities, the NEB may examine and evaluate all company plans, procedures, practices and work activities, as well as hazard assessments and company policies, to make an overall determination of the adequacy and effectiveness of an EPR program.	During an NEB Audit, inspection and other regulatory activities will occur to determine the overall adequacy and effectiveness of a company's EPR program.
51	NEB Management and Protection Program Evaluation and Audit Protocol	Page 5 Section 1.1	**1.0 Policy and Commitment** **1.1 policy and Commitment Statements** **Expectations**: The company shall have a policy approved and endorsed by senior management (the Policy). It should include goals and objectives and commit to improving the performance of the company.	The company shall have a policy including goals and objectives to improve the performance.
52		Page 5 Section 2.1	**2.0 Planning** **2.1 Hazards Identification, Risk Assessment and Control** **Expectations**: The company shall be able to demonstrate a procedure to identify all possible hazards. The company should access the degree of risk associated with these hazards. The company should be able to support the rationale for including or excluding possible risks in regard to its environment, safety, integrity, crossings and awareness and emergency management and protection programs (management and protection programs). The company should be able to implement control measures to minimize or eliminate the risk.	The company shall have procedure to identify all possible hazards, assess the degree of risk and be able to implement control measures to minimize or eliminate the risk.

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53	NEB Management and Protection Program Evaluation and Audit Protocol	Page 6 Section 2.2	**2.2 Legal requirements** **Expectations**: The company shall have a verifiable process for the identification of legal requirements into its management and protection programs. The company should have a documented procedure to identify and resolve non-compliances as they relate to legal requirements which includes updating the management and protection programs as required.	The company should have a documented procedure to identify the legal requirements, resolve non-compliance issues related to its management and protection programs.
54		Page 6 Section 2.3	**2.3 Goals, Objectives and Targets** **Expectations:** The company should have goals, objectives and quantifiable targets relevant to risks and hazards associated with the company's facilities and activities (i.e. construction, operations and maintenance). The objectives and targets should be measureable and consistent with the Policy and legal requirements and ideally include continual improvement and prevention initiatives, where appropriate.	The company should have goals and targets consistent with the policy and legal requirements to quantify the risks and hazards associated with its facilities and activities.
55	NEB Management and Protection Program Evaluation and Audit Protocol	Page 7 Section 3.1	**3.0 IMPLEMENTATION** **3.1 Organizational Structure, Roles and Responsibilities** **Expectations:** The company shall have an organizational structure that allows its management and protection systems to effectively function. The company should have clear roles and responsibilities for the development, implementation and management of the management and protection programs.	The NEB expects a company should assign clear roles and responsibilities for the effective function of its management and protection programs.
56		Page 7 Section 3.2	**3.2 Management of Change** **Expectations**: The company shall have a management of change program. The program should include: • identification of changes that could affect the management and protection programs; • documentation of the changes; and • analysis of implications and effects of the changes, including introduction of new risks or hazards or legal requirements.	The NEB audit program requires the company to have a management of change program for the identification, analysis and effects of changes on management protection program.
57	NEB Management and Protection Program Evaluation and Audit Protocol	Page 8 Section 3.3	**3.3 Training, Competence and Evaluation** **Expectations:** The company shall have a **documented training program for employees and contractors** related to the company's management and protection programs. The company shall inform visitors to company maintenance sites of practices and procedures to be followed. Training requirements should include information about program-specific policies. Training should include **emergency preparedness and environmental response requirements** as well as the potential consequences of not following the requirements. The company should determine the required level of competency for employees and contractors. Training shall **evaluate competency** to ensure desired knowledge requirements have been met. Training programs should include **record management procedures**. The training program should include the **methods to ensure staff remains current in their required training**. The program should include requirements and standards for addressing any identified **non-compliance** to training requirements.	The company shall have a documented training program for employees and contractors, including information about emergency preparedness and environmental response requirements, to determine required level of competency, record management procedures, requirements and standards for addressing noncompliance.

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58	NEB Management and Protection Program Evaluation and Audit Protocol	Page 8 Section 3.4	**3.4 Communication** **Expectations:** The company should have adequate, effective and documented communication process(es): • to inform all persons associated with the company's facilities and activities (interested persons) of its management and protection programs, policies, goals, objectives and commitments; • to inform and consult with interested persons about issues associated with its operations; • to address communication from external stakeholders • for communicating the legal and other related requirements pertaining to the management and protection programs to interested persons; • to communicate the program's roles and responsibilities to interested persons.	The company should have effective and documented communication process to inform persons associated with company's facilities, to inform persons interested about operational issues, legal requirements of management, the protection program and the programs roles and responsibilities.
59		Page 9 Section 3.5	**3.5 Documentation and Document Control** **Expectations:** The company should have documentation to describe the elements of its management and protection programs – where warranted. The documentation should be reviewed and revised at regular and planned intervals. Documents should be revised immediately where changes are required as a result of legal requirements or where failure to make immediate changes may result in negative consequences. The company should have procedures within its management and protection programs to control documentation and data as it relates to the risks identified in element 2.0.	The company should have a documented management and protection program reviewed and revised at regular and planned intervals, and a procedure to control documentation.
60	NEB Management and Protection Program Evaluation and Audit Protocol	Page 9 Section 3.6	**3.6 Operational Control-Normal Operations** **Expectations:** The company should establish and maintain a process to develop, implement and communicate mitigative, preventive and protective measures to address risks and hazards identified in elements 2.0 and 3.0. The process should include measures to reduce or eliminate risks and hazards at their source, where appropriate.	The company should establish and maintain a process to address risks and hazards identified, and measures to reduce or eliminate risks and hazards at their source.
61		Page 10 Section 3.7	**3.7 Operational Control-Upset or Abnormal Conditions** **Expectations:** The company shall establish and maintain plans and procedures to identify the potential for upset or abnormal operating conditions, accidental releases, incidents and emergency situations. The company shall also define proposed responses to these events and prevent and mitigate the likely consequence and/or impacts of these events. The procedures must be periodically tested and reviewed and revised where appropriate (for example, after emergency events).	The company shall establish plans and procedures to identify the potential for upsets, emergency situations and proposed responses which is periodically tested, reviewed and revised.
62	Evaluation and Audit Protocol	Page 10 Section 4.1	**4.0 CHECKING AND CORRECTIVE ACTION** **4.1 Inspection, Measurement and Monitoring** **Expectations:** The company shall develop and implement surveillance and monitoring programs. These programs should address contract work being performed on behalf of the company. These programs should include qualitative and quantitative measures for evaluating the management and protection programs an should, at a minimum, address legal requirements well as the risks identified as significant in elements 2.0 and 3.0. The company should integrate the surveillance and monitoring results with other data in risk assessments and performance measures, including proactive trend analyses. The company shall have documentation and records of its surveillance and monitoring programs	The company shall develop and implement a surveillance and monitoring program to address the contract work performed, for evaluating the management and protection program to meet the minimum legal requirements.

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63	NEB Management and Protection Program Evaluation and Audit Protocol	Page 11 Section 4.2	**4.2 Corrective and Preventive Actions** **Expectations:** The company shall have a process to investigate incidents or any non-compliance that may occur. The company shall have a process to mitigate any potential or actual issues arising from such incidents or non-compliances. Such mitigation may include appropriate timing and actions for addressing the issues that arise. The company shall demonstrate that it has established a documented procedure to: • set criteria for non-compliance; • identify the occurrence of any non-compliances; • investigate the cause(s) of any non-compliances; • develop corrective and/or preventive actions; and • effectively implement the required corrective and/or preventative actions. The company should develop procedures to analyse incident data in order to identify deficiencies and opportunities for improvement in its management and protection programs and procedures.	The company shall have a process to investigate incidents or any noncompliance, and to mitigate any potential issues. Also should develop procedures to analyze incident data in order to identify deficiencies and opportunities for improvement in its management and protection programs and procedures.
64		Page 12 Section 4.3	**4.3 Records management** **Expectations:** The company shall establish and implement procedures to ensure that the records supporting the management and protection programs are retained, accessible and maintained. The company shall, as a minimum, retain all records for the minimum lengths of time as required by the applicable legislation, regulation and standards incorporated by reference into the regulation.	The company shall establish procedures to ensure records for the management and protection programs are retained, accessible and maintained for minimum length of time as required by the applicable jurisdiction.
65		Page 12 Section 4.4	**4.4 Internal Audit** **Expectations:** The company shall develop and implement a documented process to undertake audits of its management and protection programs and procedures. The audit process should identify and manage the training and competency requirements for staff carrying out the audits. These audits shall be conducted on a regular basis.	The company shall develop and implement a documented process to audit its management and protection programs, to identify the training and competency requirements.
66		Page 12 Section 5.0	**5.0 management Review** **Expectations**: Senior management should formally review the management and protection programs for continuing suitability, adequacy and effectiveness. The review should be based on appropriate documentation and records including the results of the surveillance, monitoring and audit programs. The review should be formal and documented and should occur on a regular basis. The programs and the company's overall performance.	The NEB requires the company' to have a formal review of their management and protection programs on a regular basis to check its adequacy and effectiveness.
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71	**NEB Expected Elements for Emergency Preparedness and Response Programs**	Page 1,2 Section 2.1	**2.1 Regulatory requirements for Emergency Preparedness and Response Program** To meet the requirements set out in sections 32 to 35, companies must: • have an up-to-date emergency procedures manual; • regularly review and update the manual; • file the emergency procedures manual and all updates with the neb; • establish and maintain liaison with all parties that may be involved in an emergency situation; • ensure that all affected parties are aware of the applicable procedures to be followed in an emergency situation and that the procedures are consistent with those in the emergency procedures manual; and • have a continuing education program for all appropriate agencies, organizations and the public adjacent to their pipeline to inform them of the location of the facilities, potential emergency situations and emergency procedures to be followed. Companies must ensure that all persons and parties that may be involved in responding to an emergency are knowledgeable of company facilities, the hazardous products involved and emergency procedures to be followed in the event of an incident or emergency.	The NEB requires that companies must have an up-to-date emergency procedural manual, regularly reviewed and updated, maintain liaison with the parties involved in emergency, ensure all parties are aware of applicable procedures and have a continuous education program for public residing pipeline.
72	**NEB Expected Elements for Emergency Preparedness and Response Programs**	Page 3 Section 2.2.2	**2.2.2 Emergency** Companies must consider all probable emergencies and have applicable procedures in place to deal with potential effects and threats to people, property and the environment, as determined through a formal hazard assessment.	Companies must have procedures to deal will all emergencies, potential effects to public, property and environment identified through hazard assessment.

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73	NEB Expected Elements for Emergency Preparedness and Response Programs	Page 3 Section 2.2.3	**2.2.3 Terrorism and Other Criminal Activities** Companies must consider preventing and responding to emergency situations resulting from criminal activities.	The companies must consider ERP resulting from criminal activities.
74		Page 3 Section 2.2.4	**2.2.4 Criteria for Determining levels of Emergencies** Companies should use the CAN/CSA Z731-95 or a similar definition and criteria for the determination of an emergency and triggers for various levels of response to emergency situations.	The companies should use the *CAN/CSA Z731-03* for the determination of emergency levels and response.
75	NEB Expected Elements for Emergency Preparedness and Response Programs	Page 5 Section 3.2	**3.2 Emergency Procedures Manual** At a minimum, an emergency procedures manual should include information related to the following topics: • Directions for Use of Manual; • Emergency Preparedness and Response Policy; • Description of Initial response to Incident Calls; • Management of Threat Information; • Definitions and Levels of Emergencies; • Corporate and Operational Chains of Command; • Internal and External Contact Lists; • External Communication information 9e.g. media outlets); • Description of General and Site Specific Emergency; • Response procedures; • Roles and Responsibilities (e.g. Checklist of duties); • Site-Specific Emergency Information; • Lists of persons in Emergency Planning Zones ; Environmental or Other Areas Requiring Special Consideration or protection; • Detailed Product Information (msds); • Description and Location or Response Equipment; • Internal and External Reporting requirements; • Area Maps; • Training Requirements; • Role of Government Departments; • Manual Updating Procedure and Schedule; • Forms and Records; and • Manual Distribution list.	Reference list for minimum requirements for the emergency procedures manual.
76	NEB Expected Elements for Emergency Preparedness and Response Programs	Page 6-8 Section 3.4	**3.4 Continuing Education Program** Companies are require under section 35 of OPR-99 to develop a continuing education program for police, fire, and medical personnel, as well as other appropriate organizations and agencies and the public adjacent to the pipeline. 3.5 Emergency Response Training 3.6 Emergency Response Exercises 3.7 Emergency Response Equipment	Under section 35 of *OPR-99*, companies are required to develop a continuing education program for different departments, organizations and agencies as well as the public adjacent to the pipeline.

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77	CSA Z662 -11 OIL AND GAS PIPELINE SYSTEMS	Page 1 Section 1.1	**1 Scope** **1.1** This Standard covers the design, construction, operation, and maintenance of oil and gas industry pipeline systems that convey a) Liquid hydrocarbons, including crude oil, multiphase fluids, condensate, liquid petroleum products, natural gas liquids, and liquefied petroleum gas; b) Oilfield water; c) Oilfield steam; d) Carbon dioxide used in oilfield enhanced recovery schemes; or e) Gas	The Standard covers the design, construction, operation and maintenance of oil and gas industry pipeline systems that convey crude oil, multiphase fluids, condensate, liquid petroleum products, natural gas liquids, liquefied petroleum gas, oilfield water, oilfield steam, carbon dioxide used in oilfield enhanced recovery schemes and gas.
78 79	CSA Z662 -11 OIL AND GAS PIPELINE SYSTEMS	Page 31 Section 3	**3. Safety and Loss management systems, integrity management programs, and engineering assessments for oil and gas industry pipeline systems** **3.1 Safety and loss management system** **3.1.1** Operating companies shall develop, implement, and maintain a documented safety and loss management system for the pipeline system that provides for the protection of people, the environment and property. 3.1.2 The safety and loss management system shall include the following elements: Clearly articulated policy and leadership commitment; a) An organizational structure with well- defined responsibilities and authorities that supports the effective implementation of the safety and loss management system; b) A process for the management of resources, including: i. The establishment of competency requirements; ii. An effective training program; and iii. Contractor selection and performance monitoring c) A communication plan that supports the effective implementation and operation of the safety and loss management system; d) A document and records management process for the effective operation of the safety and loss management system; e) A document and records management process for the effective operation of the safety and loss management system; f) Operational controls including the development of procedures for hazard identification and risk management, design and material selection, construction, operations and maintenance, pipeline system integrity management and security management; g) A management of change process; and h) A continual improvement process including i. Performance monitoring for the ongoing assessment of conformance with the requirements of the safety and loss management system, and the mechanisms for taking corrective and preventative measures in the event of a non-conformance; ii. Development of measureable objectives and targets; and iii. Periodic audits and reviews to evaluate the effectiveness of the safety and loss management system in achieving objectives and targets.	*CSA Z662* requires operating companies to develop, implement and maintain a safety and loss management system for the pipeline system that provides for the protection of people, the environment and property. It includes: a) clear policy and leadership commitment, b) an organizational structure with well-defined responsibilities, c) a process for the resource management, d) a communication plan, e) a records management process for effective operation of the safety and loss management system including procedures for hazard identification etc..., f) operational controls, g) a management of change process, and h) a continuous improvement process.

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2	**AB**			
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**
4	**AUTHORITY / RESPONSIBILITY**			
5	Pipeline Act	Part 4, Section 23 pg 17	23(1) A licensee shall discontinue or abandon a pipeline when directed by the board or required by the regulations. (2) The board may order that a pipeline be discontinued or abandoned where the board considers that it is necessary to do so in order to protect the public or the environment. (3) A discontinuation or abandonment must be carried out in accordance with the regulations.	The ERCB can order an abandonment/discontinuation to protect the public/environment and it must be completed in accordance with regulations.
6	Pipeline Regulation	Part 10, Section 82(9), pg 42	(9) A licensee shall abandon a pipeline in accordance with this section (b) if the Board has notified the licensee that in the opinion of the Board the pipeline may constitute an environmental or safety hazard, (f) if the licensee has not discontinued the pipeline in accordance with the Act, this Regulation or an order or direction of the Board,	A pipeline must be abandoned if the ERCB determines it is an environmental or safety hazard; or, if the line has not been discontinued in accordance with the Act or regulation.
7	Pipeline Act	Part 4, Section 24 pg 17	24 If, in the opinion of the Board, a pipeline is not discontinued or abandoned in accordance with the direction of the Board or the regulations, the Board may (a) authorize any person to discontinue or abandon the pipeline, or (b) discontinue or abandon the pipeline on the Board's own motion.	If regulations are not complied with, the ERCB can authorize someone else to complete the work.
8	Pipeline Act	Part 4, Section 25 pg 18	25 Abandonment of a pipeline does not relieve the licensee from the responsibility for further abandonment or other work with respect to the same pipeline or part of a pipeline that may become necessary,	A licensee retains responsibility for the pipeline after abandonment.
9	Pipeline Regulation	Part 10, Section 83, pg 43	83 Notification to the Board of discontinuance or abandonment operations does not relieve the licensee from the responsibility for further discontinuance or abandonment or other operations with respect to the same pipeline or part of a pipeline that may become necessary.	A part of a pipeline being abandoned does not relieve the licensee of the relevant responsibilities.
10	**NOTIFICATION / APPROVAL**			

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11	Energy Development Applications and Schedules	Dir. 056, Section 6.1, pg 119	6.1 Overview An applicant must use Schedule 3 when applying to ... notify the ERCB of a pipeline abandonment and pipeline discontinuation.	Use Schedule 3 to notify of an abandonment or discontinuation.
12	Energy Development Applications and Schedules	Dir. 056, Section 6.7, pg 125	6.7 Licence Amendments 12) The licensee must submit a pipeline licence amendment application for .... e) resumption, f) discontinuation, g) abandonment/partial removals, …	A licensee must submit amendment application for resumption/discontinuation/abandonment/partial removal.
13	Pipeline Regulation	Part 10, Section 82(1-2), pg 40	82(1) Unless otherwise authorized by the Board, a licensee shall discontinue, abandon or return to active flowing service a pipeline that has not seen active flowing service within the last 12 months. (2) Unless otherwise authorized by the Board, a licensee required under subsection (1) to discontinue or abandon a pipeline or part of a pipeline shall do so in accordance with the requirements of Directive 056 and notify the Board in accordance with the requirements of Directive 056 within 90 days of the completion of the discontinuance or abandonment operations.	A pipeline that has not seen active service for 12 months must be discontinued, abandoned or returned to service. In doing so, it must comply with *Directive 056* and notify the Board within 90 days.
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16	**GENERAL**			
17	Pipeline Regulation	Part 10, Section 82(4), pg 41	82(4) If a pipeline or part of a pipeline cannot be physically isolated or disconnected from an operating facility or pipeline, it must not be discontinued or abandoned but must be maintained as an operating pipeline and its integrity must be taken into account in the licensee's overall pipeline integrity management program.	If the pipeline cannot be physically isolated from adjoining pipeline, it cannot be abandoned and must be managed through the integrity management program.

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18	Pipeline Regulation	Part 10, Section 82(7-8), pg 42	(7) If the pipeline or the part of the pipeline to be discontinued or abandoned is either polymeric in composition or contains a polymeric liner, the licensee shall monitor the internal atmosphere for a period of time sufficient to determine that the polymeric materials are not evolving any hazardous gaseous constituents that would prevent the pipeline from complying with subsection (3)(c) and (f). (8) Subsection (6) applies to all pipelines including those that were discontinued or abandoned prior to the coming into force of this Regulation.	Polymeric or polymeric lined pipelines must be monitored for the potential evolution of hazardous gases.
19	Energy Development Applications and Schedules	Dir. 056, Section 6.9.14.1, pg 133	6.9.14.1 Base Plan Maps Base plan map(s) must be submitted for new construction, abandonment, discontinuation, removal, resumption, change of substance (when the licence numbers change), pipeline(s) not constructed, and pipeline installations. 43) The applicant must complete the following tasks and submit the applicable map with each application. c) Indicate pipelines to be abandoned, discontinued, not constructed, or removed in green. d) Indicate installation to be abandoned or removed in green. e) Indicate the existing pipeline for a line split in red. In blue or black put a line across the existing pipeline where the line split is located f) Indicate in red the existing pipeline for a substance change. Cross off the old licence number in green.	Base Plan Maps must be submitted for abandoned/discontinued pipelines and shown in green.
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22	**DISCONTINUATION**			
23	Pipeline Regulation	Part 10, Section 82(3), pg 40	(3) When a pipeline or part of a pipeline is discontinued, the licensee shall ensure that the pipeline or the part of the pipeline that is discontinued is (a) physically isolated or disconnected from any operating facility or other pipeline, (b) cleaned, if necessary, (c) purged with fresh water, air or inert gas, any of which may include the addition of internal corrosion inhibitors if the licensee is prepared to mitigate the environmental effects that could occur as a result of accidental release or spillage, (d) protected by suitable internal and external corrosion control measures, (e) not isolated or disconnected in a manner that results in an adjoining operating pipeline having fittings or connection points remaining that would create stagnant fluid traps or dead legs, unless (i) those locations are permanently accessible and subject to a scheduled inspection program, or (ii) the contained fluids are confirmed and documented as being non-corrosive, and (f) left in a safe condition.	When a pipeline is discontinued, the licensee must physically isolate so as to not create dead legs or fluid traps (unless it is accessible and can be routinely inspected, or the fluids are confirmed as non-corrosive), clean and purge isolated sections, protect using corrosion control measures and leave in a safe condition.
24	Energy Development Applications and Schedules	Dir. 056, Section 6.9.5, pg 129	6.9.5 Pipeline Discontinuation Pipeline discontinuation is defined as the temporary deactivation of a pipeline or part of a pipeline. 25) An application is not required for pipeline discontinuation; however, for the purpose of updating ERCB records, the applicant must notify Facilities Applications by submitting a licence amendment application within 90 days of completion of the pipeline discontinuation. Industry and public notification is not mandatory for discontinuations (see Table 6.2). 26) When discontinuing a pipeline, the licensee must ensure that a) proper discontinuation procedures are in place (see Pipeline Regulation, Section 82), b) cathodic protection will be maintained in working condition and monitored in accordance with the Pipeline Regulation, Section 53, and c) setback distances are retained (Table 6.3).	Discontinuation is temporary deactivation and requires licensee to: notify Facilities Applications, ensure proper procedures are used plus maintain and monitor CP.
25	**ABANDONMENT**			

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26	Pipeline Regulation	Part 10, Section 82(5), pg 41	(5) When a pipeline or part of a pipeline is abandoned, the licensee, in addition to meeting the requirements of subsection (3), shall (a) remove any surface equipment, including pig traps, risers, block valves and line heaters, unless they are located within the boundaries of a facility that will continue to have other licensed equipment operating after the pipeline abandonment, (b) cut off the pipeline or the part of the pipeline to be abandoned below surface at pipeline level, except when it is located within the boundaries of a facility that will continue to have other licensed equipment operating after the pipeline abandonment, (c) purge the pipeline with fresh water, air or inert gas, none of which may contain added chemicals or corrosion inhibitors, (d) remove cathodic protection from the pipeline, (e) permanently plug or cap all open ends by mechanical means or welded means, and (f) identify all ends with a permanent tag that indicates the licensee, licence and line number, other end points, date of abandonment and abandonment media left inside the pipeline.	When pipeline is abandoned, surface equipment (pig traps, risers etc.) must be removed, the abandoned portion below surface cut off, the line purged with a fluid that does not contain any chemicals or inhibitors, cathodic protection removed, open ends permanently plugged and tagged for permanent identification.
27	Energy Development Applications and Schedules	Dir. 056, Section 6.9.6, pg 129	6.9.6 Pipeline Abandonment Pipeline abandonment is defined as the permanent deactivation of a pipeline in a manner prescribed by the Pipeline Regulation; this includes any measures required to ensure that the pipeline is left in a permanently safe and secure condition. This also includes the removal of related surface equipment no longer in use, including pig traps, risers, block valves, and line heaters, unless they are located within the boundaries of a facility that will continue to have other licensed equipment operating after the pipeline abandonment. 27) When abandoning a pipeline, the licensee must a) conduct notification with parties along the entire pipeline right-of-way and those affected by setbacks prior to any abandonment procedures (see Table 6.2); b) ensure that proper abandonment procedures are in place (see Pipeline Regulation, Section 82); and c) submit a licence amendment application notifying Facilities Applications of the abandonment within 90 days of the pipeline abandonment.	Abandonment includes: the measures taken to ensure safe condition and removal of surface equipment, notify all on ROW, use proper procedures and notify Facilities Applications within 90 days.
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29	**RESUMPTION**			
30	Pipeline Regulation	Part 10, Section 85, pg 43	85(1) Unless otherwise authorized by the Board, a licensee intending to resume the operation of a pipeline or part of a pipeline that has been discontinued, abandoned or that has not been in active flowing service within the last 12 months shall make an application to the Board for approval in accordance with the requirements of Directive 056. (2) An application under subsection (1) shall include comprehensive information as set out in Directive 056 about the pipeline materials and their condition and the Board may require pressure testing, non-destructive examination, material testing or other examination of the pipeline before rendering a decision on the application.	To resume a pipeline that was previously discontinued, abandoned or did not see flowing service for 12 months, the licensee must apply to the ERCB according to *Directive 056*.

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31	Energy Development Applications and Schedules	Dir. 056, Section 6.9.8, pg 130	6.9.8 Pipeline Resumption Pipeline resumption is defined as resuming operations on a discontinued pipeline or on a pipeline that has not been in active flowing service within the last 12 months to its original licensed parameters. Abandoned pipelines are not normally candidates for resumption of operation. In rare and exceptional circumstances, a licence may be granted to resume operation of an abandoned pipeline if the applicant has supported the request with a comprehensive engineering assessment. 29) When resuming operation of a discontinued pipeline, the licensee must ensure that a) cathodic protection was maintained in accordance with CSA Z662, b) there is suitable external/internal coating integrity, and c) sour service requirements are met, if applicable. 30) The licensee must conduct personal consultation and notification if the resumption of the discontinued pipeline in conjunction with other activities results in a change to a Category D pipeline (see Table 6.2). 31) When resuming operation of an abandoned pipeline, the licensee must file a nonroutine application and demonstrate a) compliance with personal consultation, confirmation of nonobjection, and notification requirements for all parties along the entire pipeline right-of-way and those affected by setbacks (see Table 6.2), b) the integrity of the pipeline and the external/internal coating, c) that sour service requirements of the most recent version of CSA Z662 are met, if applicable, and d) that a comprehensive engineering assessment supports the resumption.	Resumption is defined as resuming operation of discontinued pipeline, or pipeline not in service for 12 months. Abandoned pipeline is not typically resumed. Prior to resumption, ensure CP was maintained, coating integrity is suitable, and it meets sour requirements. Consultation/notification is required if changes to category D which require licensee to file non-routine application.
32	Pipelines - Requirements and Reference Tools	Dir. 077, Part B, Section 2.3, pg 49	2.3 Integrity Management for Existing Pipelines The pipeline operator must perform an engineering assessment (CSA Z662, Clause 10.14.6) and must confirm the pipeline integrity prior to resuming operation if the pipeline • has been discontinued or abandoned (CSA Z662, Clause 10.16.2: Reactivation of piping, and Pipeline Act, Section 85), • has otherwise been out of operation for longer than one year, or • is being requalified. For existing pipelines, a detailed proposal and testing procedure must be submitted to the ERCB Pipeline Operations, using the e-mail address pipelineoperations@ercb.ca, for approval prior to the test regardless of pipeline volume if • there is known or suspected corrosion or any other condition that could potentially cause the pipeline to break during testing, and • in situations where hydrostatic testing may not be feasible or additional pipeline integrity information and an engineering assessment indicates that gaseous media pressure testing may be possible.	The pipeline operator must perform an engineering assessment and confirm pipeline integrity prior to resumption if the pipeline has been discontinued or abandoned, out of operation longer than one year, or is being requalified. A detailed proposal and testing procedure must be submitted for approval prior to the test (regardless of pipeline volume) if there is known/suspected corrosion/condition that could cause the pipeline to break during testing, and where hydrostatic testing is not feasible or gaseous media pressure testing may be possible.
33	Energy Development Applications and Schedules	Dir. 056, Section 6.7.1, pg 126	6.7.1 Pipeline Applications—Checklist for Minimum Technical Requirements Additional technical evaluation should be considered when the following pipeline activities are proposed: a pipeline resumption, ... The Pipeline Applications Checklist for Minimum Technical Requirements, found on the Directive 056 Web page, should be used as a reference document.	For pipeline resumption, additional technical evaluation should be considered. The Pipeline Applications Checklist for Minimum Technical Requirements should be used.
34	**AFTER DISCONTINUATION / ABANDONMENT**			

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35	Pipeline Regulation	Part 10, Section 82(6), pg 41	(6) When an existing pipeline is exposed for any purpose and reveals a stagnant fluid trap or dead leg in an operating segment of the pipeline that resulted from a previous discontinuance or abandonment, the licensee shall remedy the stagnant fluid trap or dead leg by (a) removing and replacing the affected parts of the pipeline, (b) establishing permanent access to the affected parts of the pipeline and subjecting them to a scheduled inspection program, (c) confirming and documenting that the contained fluids are non-corrosive, or (d) some other method acceptable to the Board.	Any dead legs found that are resulting from previous discontinuances/abandonments a licensee must remedy by permanently removing or providing regular access/inspection to the affected parts of the pipeline, proving contained fluids are non-corrosive, or another method acceptable to the Board.

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2	**BC**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5					AB EXCEEDS BC in the authority of the Board to order a licensee to discontinue or abandon a pipeline to protect the safety of the public or environment. In AB, if the licensee does not comply, the Board has the authority to order another person to carry out the abandonment/discontinuation. AB also EXCEEDS BC in regulating that the licensee retains responsibility for the entire pipeline, even if a portion of the line has been abandoned or discontinued. There is no mention of any of these points specifically contained at either the Act or regulation level for BC.
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11	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 9, pg 4	Deactivation 9 If a pipeline permit holder has not transported fluids through the holder's permitted pipeline or part of a pipeline for 18 consecutive months, the pipeline permit holder must (a) submit a plan for resuming the transportation of fluids through the pipeline, or (b) deactivate the pipeline or part of the pipeline.... notify the commission on completion of the deactivation.	A pipeline that has not transported fluids for 18 months must resume operation or deactivate. Notify commission when complete.	AB EXCEEDS BC as it defines how to notify the Board of an abandonment/discontinuation (Schedule 3). The AB requirements EXCEED those of BC as the time period that a pipeline can remain nonflowing prior to abandonment, discontinuation or resuming operations in AB is 12 months and in BC 18 months; AB requires discontinue/abandonment as per *Directive 056* as opposed to *CSA Z662* for BC; AB requires notification within 90 days of completion, BC only requires notification after completion.
12	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 10(2), pg 5	Reactivation 10 (2) Before reactivating a pipeline, the pipeline permit holder must (a) notify the commission of the intention to carry out the reactivation, and (b) if the permit or a permission in a permit relating to the deactivated pipeline has been suspended, request that the suspension be rescinded	Must notify Commission prior to reactivation.	
13	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation				
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17					AB EXCEEDS BC as it outlines how specific situations are to be handled. Examples include: pipelines that cannot be isolated, and polymeric pipelines. No such requirements are contained in the BC regulation.

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19					AB EXCEEDS BC at the directive level as *Directive 056* outlines how Base Maps should be altered.
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23	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 9, pg 4	Deactivation 9... (b) deactivate the pipeline or part of the pipeline in accordance with **CSA Z662**	Deactivate according to *CSA Z662*.	AB is EQUAL to BC in that both detail specifically the manner in which the pipeline should be discontinued, AB through the regulations, and BC requires accordance with *CSA Z662*.
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26	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 11, pg 5	11 The following requirements are prescribed with respect to a pipeline permit and an LNG facility permit for the purposes of section 40 (e) of the Act: (a) abandon the pipeline in accordance with CSA Z662; (b) do everything referred to in section 19 (1) (a) to (g) of the Environmental Protection and Management Regulation.	Pipelines should be abandoned according to *CSA Z662.*	AB EXCEEDS the requirements for abandoning/discontinuing at the regulation level. The AB regulation is specific on what must be carried out, while BC only refers to *CSA Z662*.
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30	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 10(1), pg 5	Reactivation 10 (1) A pipeline permit holder of a deactivated pipeline system may reactivate the pipeline, but must do so in accordance with CSA Z662.	Pipelines should be reactivated in accordance with *CSA Z662.*	AB is EQUAL to BC in that both detail describe how to resume a pipeline, AB through *Directive 056/CSA Z662*, and BC with *CSA Z662*.

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	E	F	G	H	I
35					AB EXCEEDS BC as it outlines how stagnant fluid traps/dead legs are to be handled. No such requirements are contained in the BC regulation.

	J	K	L	M	N
2	**Saskatchewan**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5					AB EXCEEDS SK in the authority of the Board to order a licensee to discontinue or abandon a pipeline to protect the safety of the public or the environment. In AB, if the licensee does not comply, the Board has the authority to order another person to carry out the abandonment/discontinuation. AB also EXCEEDS SK in regulating that the licensee retains responsibility for the entire pipeline, even if a portion of the line has been abandoned or discontinued. There is no mention of any of these points specifically contained at either the Act or Regulation level for SK.
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11	The Pipelines Act	Part II, Section 5, pg 5	5 No person shall …. abandon a pipeline or discontinue the operation of a pipeline unless that person holds a licence authorizing the …. abandonment or discontinuation.		EQUAL in that both define what info is required for the application. AB is COMPARABLE with SK requiring approval to abandon/discontinue, whereas AB only requires notification. AB EXCEEDS SK as it details the actions to take if a pipeline has not been in operation for 12 months, and the time period for reporting the completion of actions.
12	The Pipelines Regulations	Section 8, Pg 5	Discontinuation of pipeline 8 A licence holder applying for a licence or an amendment to a licence to permit the discontinuation of a pipeline shall include the following with the application: (a) the reasons for the discontinuation; (b) the expected duration of the discontinuation; (c) a description of the state that the pipeline will be in during the discontinuation; …	When applying for discontinuation permit an applicant must include: the reason, expected duration, and a description of the state pipeline will be left in.	
13	The Pipelines Regulations	Section 9, Pg 5	Abandonment of pipeline 9 A license holder applying for a license or an amendment to a licence to permit the abandonment of a pipeline shall include the following with the application: (a) the reasons for the abandonment; (b) the details of the abandonment procedure, ….	When applying for abandonment, a license holder must include: the reason and details .	
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17					AB EXCEEDS SK as it outlines how specific situations are to be handled. Examples include: pipelines that cannot be isolated, and polymeric pipelines. No such requirements are contained in the SK regulation.

	J	K	L	M	N
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19					AB EXCEEDS SK at the directive level as *Directive 056* outlines how Base Maps should be altered.
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23	The Pipelines Regulations	Section 8, Pg 5	Discontinuation of pipeline 8 ….d) an undertaking respecting the maintenance of cathodic protection.	specifics of maintaining CP.	AB EXCEEDS SK in that it details specifically the manner in which the pipeline should be discontinued, whereas SK only mentions cathodic protection.
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26	The Pipelines Regulations	Section 9, Pg 5	9.....(b) the details of the abandonment procedure, which is to include: (i) the purging of the substance carried by the pipeline using fresh water, air, an inert gas or other cleaning substance; (ii) the cutting of the pipeline at both ends at the buried depth and the welding of steel plates or caps over the openings; and (iii) the removal of all above-ground facilities and the restoration of any land utilized by the pipeline.	details of abandonment procedure including purging, cutting below ground and permanently capping and removal of above ground facilities.	AB is COMPARABLE to SK in that it details specifically the manner in which the pipeline should be discontinued.
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30					AB EXCEEDS SK in terms of regulating the requirements of reactivating a pipeline.

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	J	K	L	M	N
35					AB EXCEEDS SK as it outlines how stagnant fluid traps/dead legs are to be handled. No such requirements are contained in the SK regulation.

	O	P	Q	R	S
2	**CSA**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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	O	P	Q	R	S
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	T	U	V	W	X
2	**CANADA (NEB)**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5					AB EXCEEDS CAN in the authority of the Board to order a licensee to discontinue or abandon a pipeline to protect the safety of the public or environment. In AB, if the licensee does not comply, the Board has the authority to order another person to carry out the abandonment/discontinuation. AB also EXCEEDS CAN in regulating that the licensee retains responsibility for the entire pipeline, even if a portion of the line has been abandoned or discontinued. There is no mention of any of these points specifically contained at either the Act or Regulation level for the CAN.
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	T	U	V	W	X
11	National Energy Board Act	Part V, Section 74 (1)(d), pg 61	74. (1) A company shall not, without the leave of the Board, ...(d) abandon the operation of a pipeline		EQUAL in that both require action after 12 months of no flow through the pipeline. AB is COMPARABLE with CAN requiring approval to abandon/deactivate/reactivate/decommision, whereas AB only requires notification. The specific documentation required for notification in AB is Schedule 3 of *Directive 056*. There is no reference made to a similar document in CAN.
12	Onshore Pipeline Regulations	Part 7, Section 50, Pg. 17	50. A company shall include in an application made under section 74 of the Act for leave to abandon a pipeline or part of one the reasons, and the procedures that are to be used, for the abandonment.	When applying to abandon a pipeline the company must include the reasons and procedures.	
13	Onshore Pipeline Regulations	Part 6, Section 44, Pg. 15	44. (1) If a company proposes to deactivate a pipeline or part of one for 12 months or more, has maintained a pipeline or part of one in a deactivated mode for 12 months or more or has not operated a pipeline or part of one for 12 months or more, the company shall submit an application for deactivation to the Board. (2) The company shall include in the application the reasons, and the procedures that were or are to be used, for the activity that is the subject of the application.	If a pipeline has not been in service, will or has been deactivated for 12 months the company must submit an application to Board. App must include reason and procedures.	
14	Onshore Pipeline Regulations	Part 6, Section 45, Pg. 15	45. (1) If a company proposes to reactivate a pipeline or part of one that has been deactivated for 12 months or more, the company shall submit an application for the reactivation to the Board. (2) The company shall include in the application the reasons, and the procedures that are to be used, for the reactivation.	To reactivate a pipeline that has been deactivated for 12 months or more an application must be submitted to the Board. App must include reason and procedures. The same application must be submitted for decommissioning a pipeline.	
15	Pipeline	Part 6, Section 45.1, Pg. 15	45.1 (1) If a company proposes to decommission a pipeline or part of one, the company shall submit an application for the decommissioning to the Board. (2) The company shall include in the application the reasons, and the procedures that are to be used, for the decommissioning.		
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17					AB EXCEEDS CAN as it outlines how specific situations are to be handled. Examples include: pipelines that cannot be isolated, and polymeric pipelines. No such requirements are contained in the CAN regulation.

	T	U	V	W	X
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19					AB EXCEEDS CAN at the directive level as *Directive 056* outlines how Base Maps should be altered.
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	T	U	V	W	X
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23					AB EXCEEDS CAN in that it details specifically the manner in which the pipeline should be discontinued.
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	T	U	V	W	X
26	Onshore Pipeline Regulations	Part 9, Section 53, Pg. 18	53. (1) A company shall conduct an audit and an inspection on a regular basis to ensure its pipeline is ... abandoned in compliance with (a) Part III of the Act; (b) Part V of the Act, as it relates to the protection of property and the environment and the safety of the public and of the company's employees; (c) these Regulations; and (d) the terms and conditions of any certificate or order issued by the Board, as they relate to the protection of property and the environment and the safety of the public and of the company's employees. (2) The audit shall document (a) all non-compliance noted; and (b) any corrective action taken or planned to be taken		AB is LOWER than CAN in that CAN requires audit and inspection of abandoned pipelines. AB EXCEEDS CAN in that it details specifically the manner in which the pipeline should be abandoned.
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30					AB EXCEEDS CAN in terms of regulating the requirements of reactivating a pipeline.

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	T	U	V	W	X
35					AB EXCEEDS CAN as it outlines how stagnant fluid traps/dead legs are to be handled. No such requirements are contained in the CAN regulation.

	Y	Z	AA
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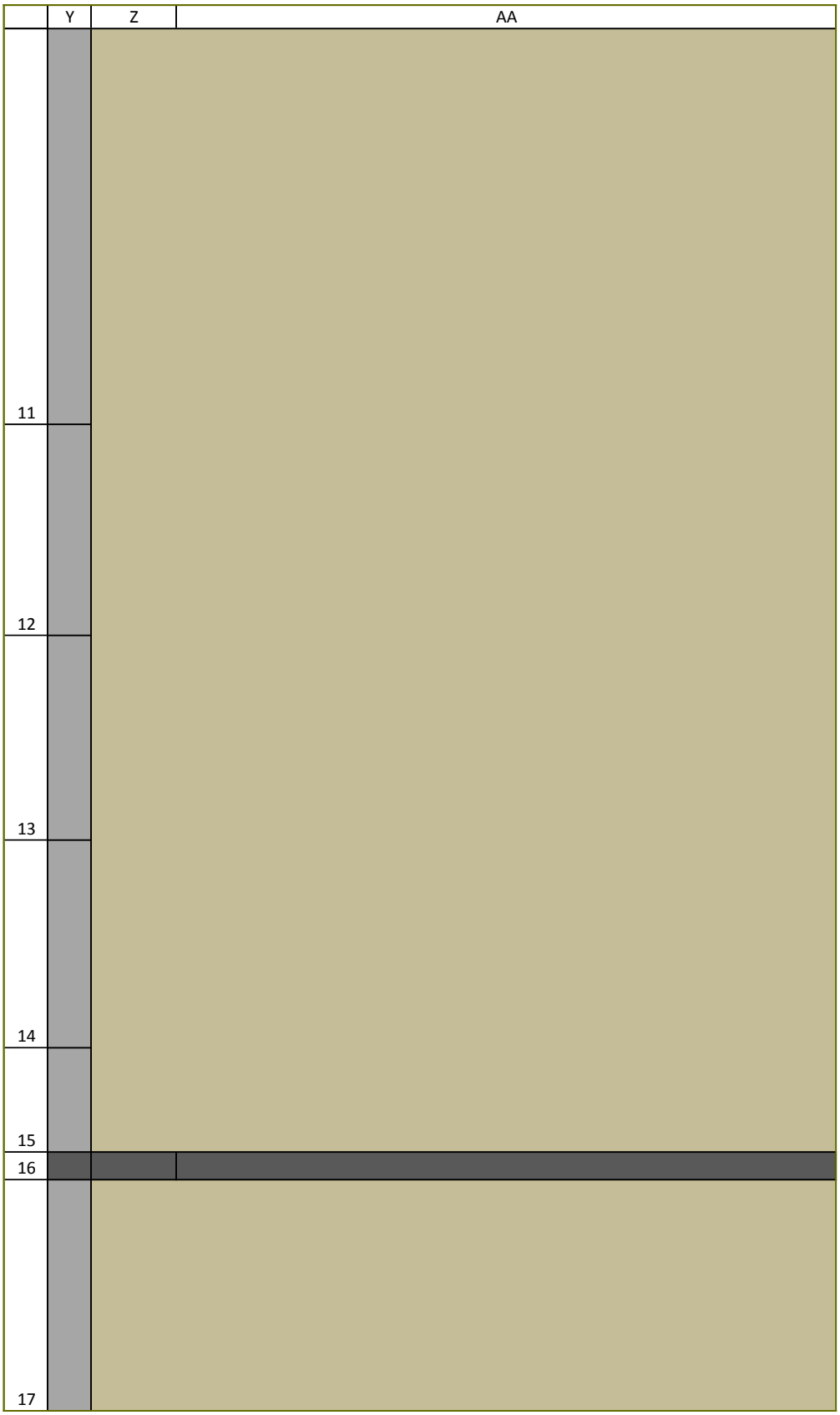
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19	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (c), Pg. 5	4(A) Not later than one year after the date of enactment of the Accountable Pipeline Safety and Accountability Act of 1996,[2] and annually thereafter, the owner or operator of each interstate gas pipeline facility shall provide to the governing body of each municipality in which the interstate gas pipeline facility is located, a map identifying the location of such facility.
20	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.404, pg 580	195.404 Maps and records. (a) Each operator shall maintain current maps and records of its pipeline systems that include at least the following information: (1) Location and identification of the following pipeline facilities: (i) Breakout tanks; (ii) Pump stations; (iii) Scraper and sphere facilities; (iv) Pipeline valves; (v) Facilities to which § 195.402(c)(9) applies; (vi) Rights-of-way; and (vii) Safety devices to which § 195.428 applies. (2) All crossings of public roads, railroads, rivers, buried utilities, and foreign pipelines. (3) The maximum operating pressure of each pipeline. (4) The diameter, grade, type, and nominal wall thickness of all pipe. (b) Each operator shall maintain for at least 3 years daily operating records that indicate— (1) The discharge pressure at each pump station; and (2) Any emergency or abnormal operation to which the procedures under § 195.402 apply. (c) Each operator shall maintain the following records for the periods specified: (1) The date, location, and description of each repair made to pipe shall be maintained for the useful life of the pipe. (2) The date, location, and description of each repair made to parts of the pipeline system other than pipe shall be maintained for at least 1 year. (3) A record of each inspection and test required by this subpart shall be maintained for at least 2 years or until the next inspection or test is performed, whichever is longer.
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26	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.727, pg 473	192.727 Abandonment or deactivation of facilities. (a) Each operator shall conduct abandonment or deactivation of pipelines in accordance with the requirements of this section. (b) Each pipeline abandoned in place must be disconnected from all sources and supplies of gas; purged of gas; in the case of offshore pipelines, filled with water or inert materials; and sealed at the ends. However, the pipeline need not be purged when the volume of gas is so small that there is no potential hazard. (c) Except for service lines, each inactive pipeline that is not being maintained under this part must be disconnected from all sources and supplies of gas; purged of gas; in the case of offshore pipelines, filled with water or inert materials; and sealed at the ends. However, the pipeline need not be purged when the volume of gas is so small that there is no potential hazard. ..... (e) If air is used for purging, the operator shall insure that a combustible mixture is not present after purging. ....(g) For each abandoned offshore pipeline facility or each abandoned onshore pipeline facility that crosses over, under or through a commercially navigable waterway, the last operator of that facility must file a report upon abandonment of that facility. (1)...In addition to the NPMS-required attributes, operators must submit the date of abandonment, diameter, method of abandonment, and certification that, to the best of the operator's knowledge, all of the reasonably available information requested was provided and, to the best of the operator's knowledge, the abandonment was completed in accordance with applicable laws. .....
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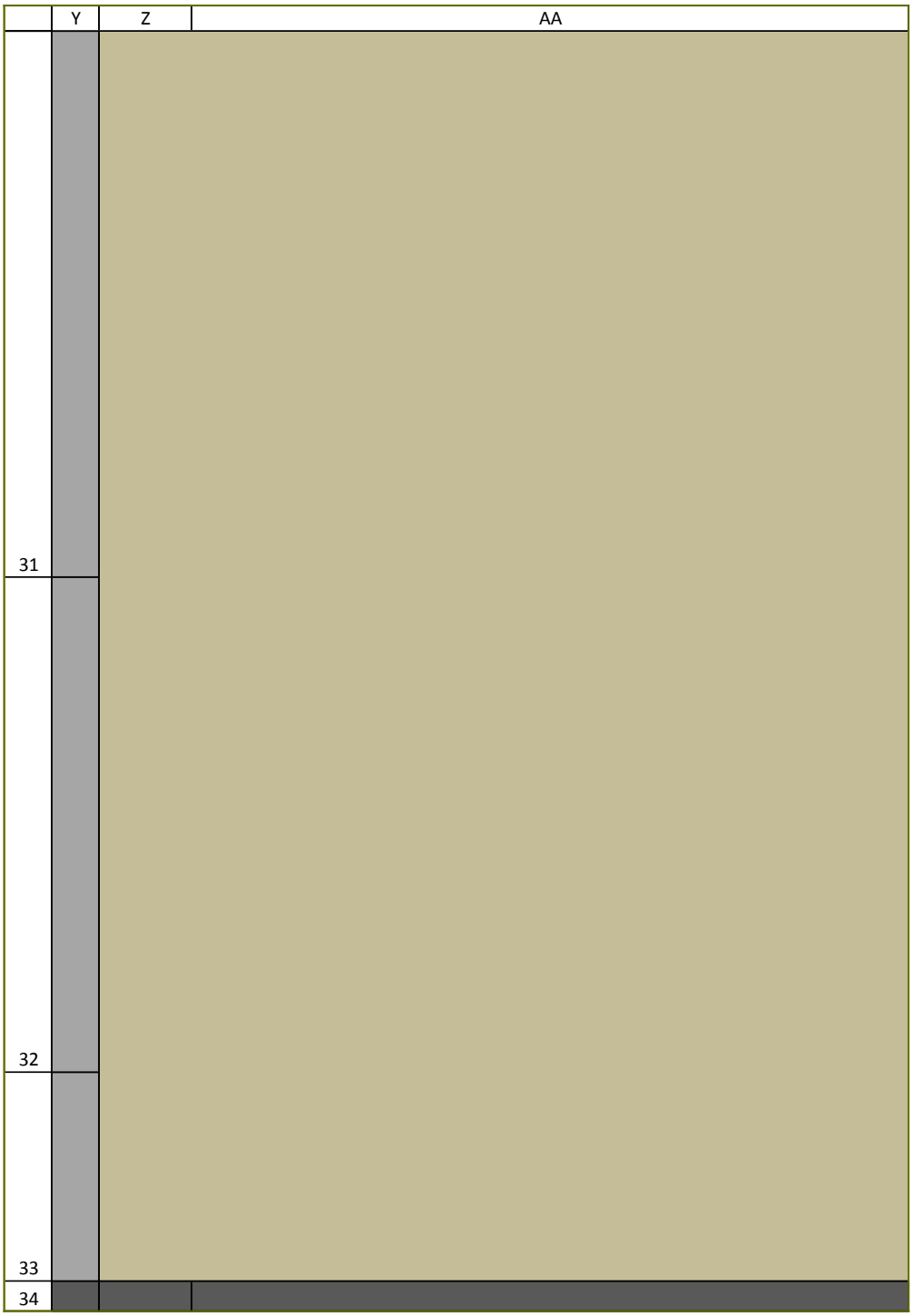

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2	**ALASKA**		
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5	Chapter 42.06 Pipeline Act	Section 42.06.290 (b), pg 5	Sec. 42.06.290. (b) Upon complaint or upon its own motion, the commission may reinvestigate a previously authorized discontinuance, abandonment, or suspension of a service described in (a) of this section. If, after due notice and hearing, the commission finds that the public convenience and necessity requires the service to be resumed, and that there has not been detrimental reliance on the previous authorization, it may order the operator or owner of the oil or gas pipeline facility to again provide the service.
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11	Chapter 42.06 Pipeline Act	Section 42.06.290 (a), pg 5	Sec. 42.06.290. Abandonment. (a) A pipeline carrier may not abandon or permanently discontinue use of all or any portion of a pipeline or abandon or discontinue any service rendered by means of a pipeline that is the subject of a certificate of convenience and necessity, without the permission and approval of the commission, after due notice and hearing, and a finding by the commission that continued service is not required by public convenience and necessity. Any interested person may file with the commission a protest or memorandum of opposition to or in support of discontinuance or abandonment. The commission may authorize temporary suspension of a service or of part of a service.
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23	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 047 (f), pg 10	(f) On or after December 30, 2006, flow lines removed from service for more than one year and not maintained in accordance with (c) and (d) of this section must be free of accumulated oil and isolated from the system. The owner or operator shall notify the department when flow lines are removed from service and when the actions required by this subsection are completed. For purposes of this subsection, a flow line removed from service is free of accumulated oil if (1) in the case of a piggable pipe, a cleaning pig is run through the pipe; (2) in the case of a pipe that is not piggable but that can be drained entirely of its contents by gravity, the pipe is completely drained of oil; or (3) in all other cases, air is blown through the pipe or another method is used to flush or evacuate standing oil accumulated in low spots; and
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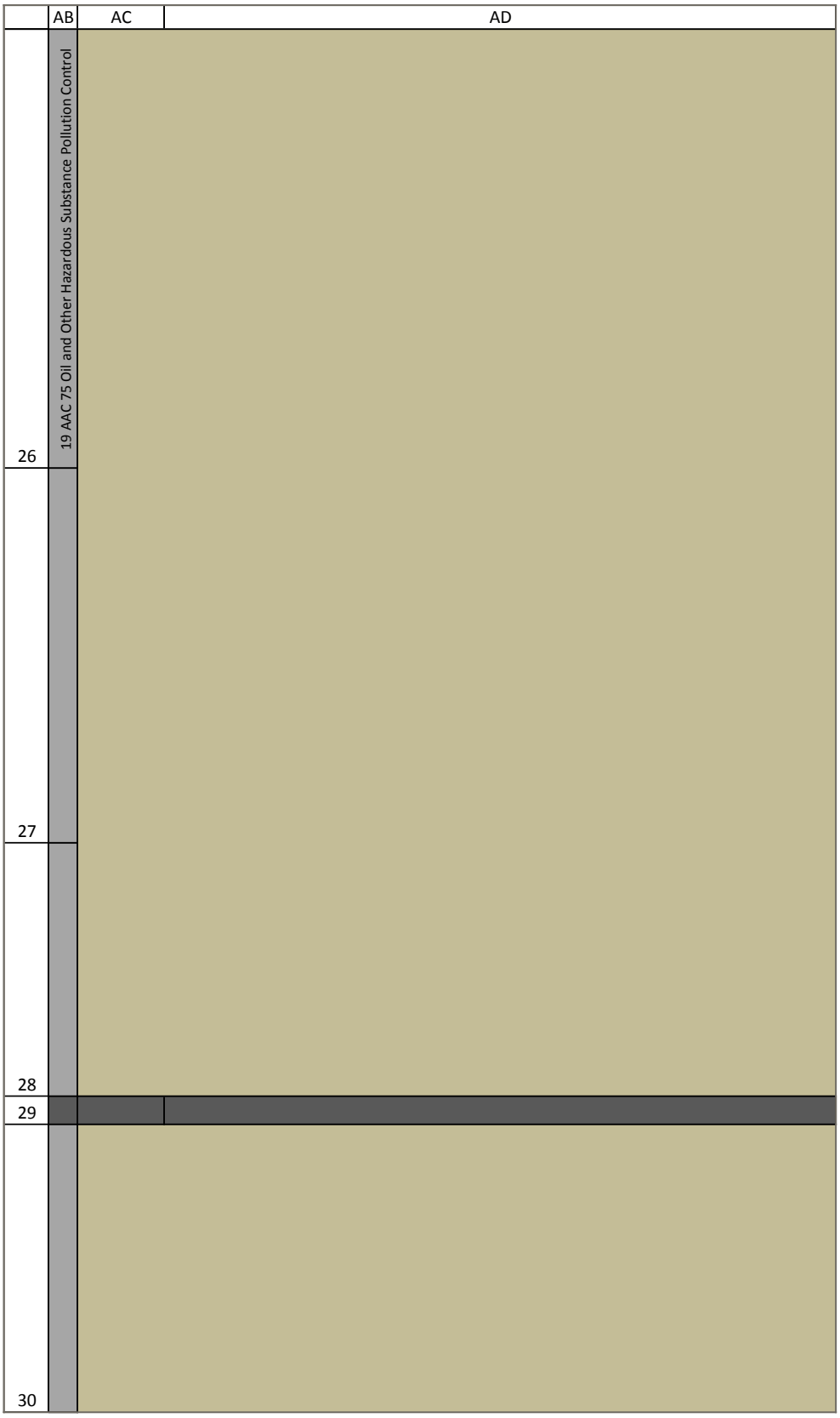
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19 AAC 75 Oil and Other Hazardous Substance Pollution Control
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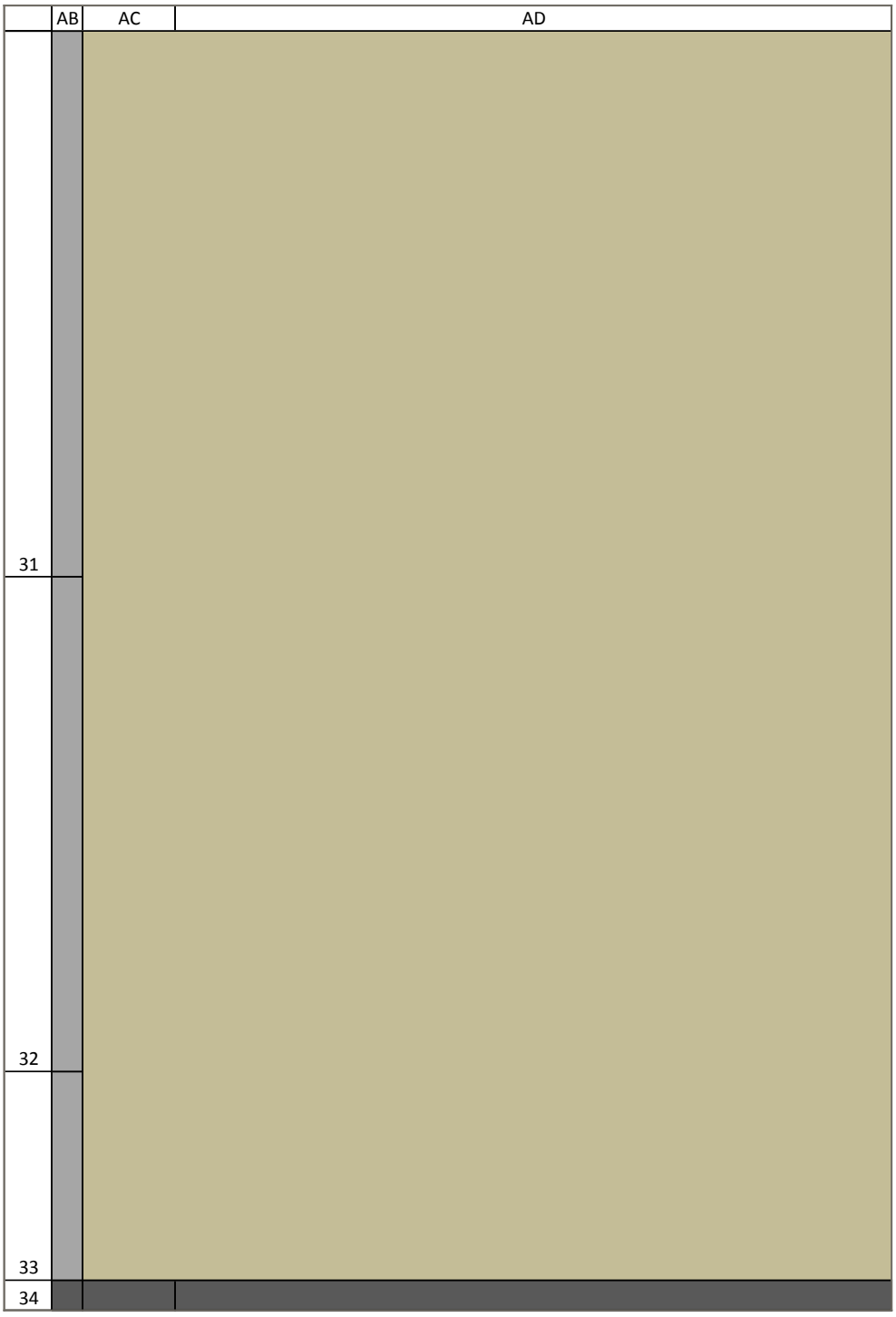

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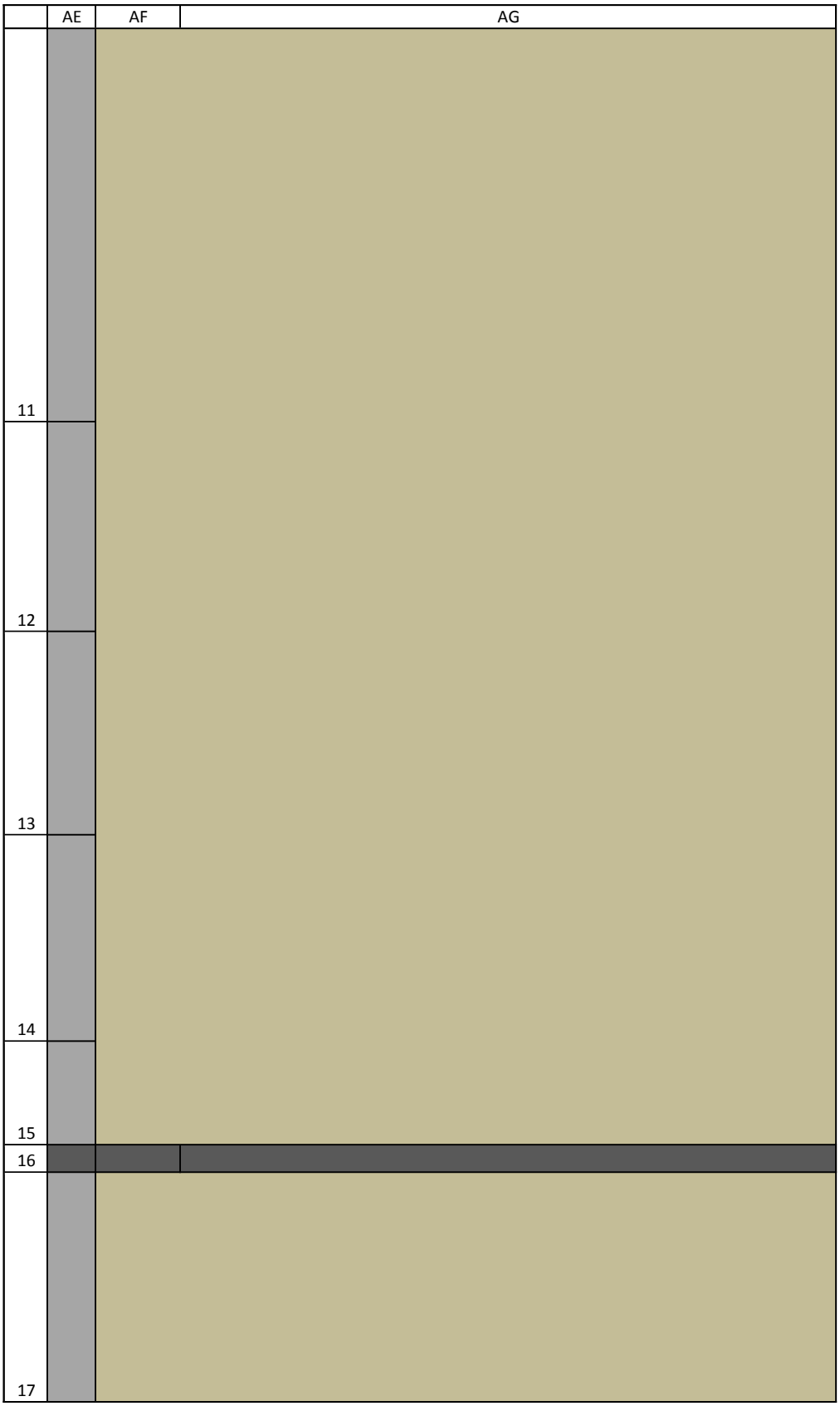
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19	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 12.3(d), pg 88	12.3 OPERATION AND MAINTENANCE RECORDS The Licensee shall prepare a records management plan. The records management plan shall detail the records to be obtained, the records to be retained, storage methods and procedures to maintain currency of the records, until the abandonment of or removal of the pipeline. Records that shall be included in the plan are the following: ...(d) Any modifications to the maps, charts, plans, drawings and procedures, required to allow the procedures to be properly administered (e.g. exposure to the public, changes in design and operating conditions). .....
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21	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 3.5, pg 22	3.5 DELAYED COMMENCEMENT OF OPERATION Where a pipeline is commissioned but not placed in operation immediately, it shall meet the requirements of Clause 3.2. If the hydrostatic test fluid is allowed to remain in the pipeline, the test fluid shall be dosed with a corrosion inhibitor or the pipeline shall be filled with a fluid that inhibits corrosion, unless it can be demonstrated that such measures are not warranted. Where the test fluid is removed, the pipeline shall be dried or purged, or both, with inert gas to produce a moisture level that will not promote corrosion during the delay period. 23 AS 2885.3- 2012 Where the pipeline is left filled with a fluid, precautions shall be taken to ensure that no damage is caused by overpressure (e .g. thermal expansion effects). During the period between the hydrostatic test and the initial operation, the pipeline integrity shall be maintained in accordance with this Standard. Should an inspection reveal that unacceptable corrosion is occurring, corrective action shall be taken and consideration shall be given to further hydrostatic testing.

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23	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.2.7, pg 78	10.2. 7 Operation of a suspended pipeline The operation of a pipeline shall be considered as suspended where the pipeline is maintained in a non-flowing condition for an extended period beyond the established maintenance routine. Where a pipeline is suspended for an indefinite period for a later use, the following conditions apply: (a) Where in accordance with AS 2885.1 the pipeline is considered as not being subject to internal corrosion, the hydrocarbon contents of the pipeline may be stored within the pipeline for the duration of the suspension. (b) Where in accordance with AS 2885 .1 the pipeline is considered to be subject to internal corrosion, the pipeline shall be purged or flushed to remove all hydrocarbons, and fill ed with a fluid (with inhibition as necessary) to an above-atmospheric pressure. NOTE: Where the fluid is water, the period of suspension should not exceed 18 months, after which the pipeline should be purged, dried and resuspended with a gas. Engineering assessment should consider the long-term impact of inhibited fluid in the pipeline. (c) The pipeline management system shall be reviewed to determine if the normal pipeline operating functions of patrols, cathodic protection monitoring, corrosion and coating surveys are to be maintained to control threats and any reporting is to continue in accordance with the operating procedures, and Sections 2, 4, 5, 6 and 9 inclusive. (d) The level of pressurization shall be monitored. (e) Maintenance shall be completed to preserve the structural integrity of the pipeline in accordance with Section 6. The suspension of above-ground pipelines shall be subject to a safety management study. The suspension shall be documented and subject to an annual review to determine if the pipeline has to be abandoned.
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26	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.6, pg 81	10.6 ABANDONING A PIPELINE 10.6.1 General When a pipeline is to be abandoned, an abandonment plan, including an environmental rehabilitation plan, shall be compiled. NOTE: The sequence of decision making that is required to develop and implement the plan should be in accordance with Figure 10 .1. When a pipeline is abandoned, it shall be disconnected from all sources of hydrocarbons that may be present in other pipelines, processing plant, meter stations, control lines and other appurtenances, and shall be purged of all hydrocarbons and vapour with a non-flammable fluid. Disposal of the purging fluid shall meet all relevant environmental and safety requirements.10.6.2 Abandonment in place When abandoned in place, the pipeline section shall be abandoned in such a way to ensure that ground subsidence and the risk of contamination of the soil or groundwater is minimized. Where cathodic protection is applied to prevent the eventual collapse of the pipeline, the responsibility fo r maintenance of the system shall remain with the Licensee and appropriate records shall be kept. NOTE: Consideration should be given to fi lling the abandoned pipeline with an inert substance.
27	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.6.5, pg 83	10.6.5 Additional requirements for abandonment When a pipeline is abandoned, the following additional requirements shall apply: (a) The cutting of all buried pipelines at a minimum of 750 mm below natural surface or at the pipeline depth, whichever is the lesser. (b) The removal of all associated buildings, fences and equipment. (c) The removal of all signage associated with the pipeline on completion of the post-abandonment maintenance period. (d) Except where cathodic protection is required in accordance with Clause 1 0.6 .2, removal of the cathodic protection system including buried cables, impressed current units, power lines, solar arrays and batteries. Anode and earthing beds shall be disconnected at 600 mm below the natural surface level. (e) The removal of all interference mitigation bonds with third-party structures, that is, the pipeline has to be mechanically and electrically disconnected from all other structures. (f) Obtaining landowner releases for the completed abandonment. (g) The relinquishing of the easement where no future or continuing use of the easement is proposed.
28	liquid petroleum, Part 3: Operation and maintenance	Section 10.6.6, pg 83	10.6.6 Abandonment records On completion of the abandonment in place of the pipeline section, 'abandoned' drawings, complying with AS 1100.401, identifying and locating sections of the abandoned pipeline, shall be prepared as part of the relinquishment procedure. These records shall be made publicly available to prevent possible mistakes in identifying an abandoned pipeline as an operational pipeline. Records of changes of operating conditions, all engineering assessments and work carried out in connection with any change in the operating conditions shall be maintained until the pipeline abandonment or removal process is complete
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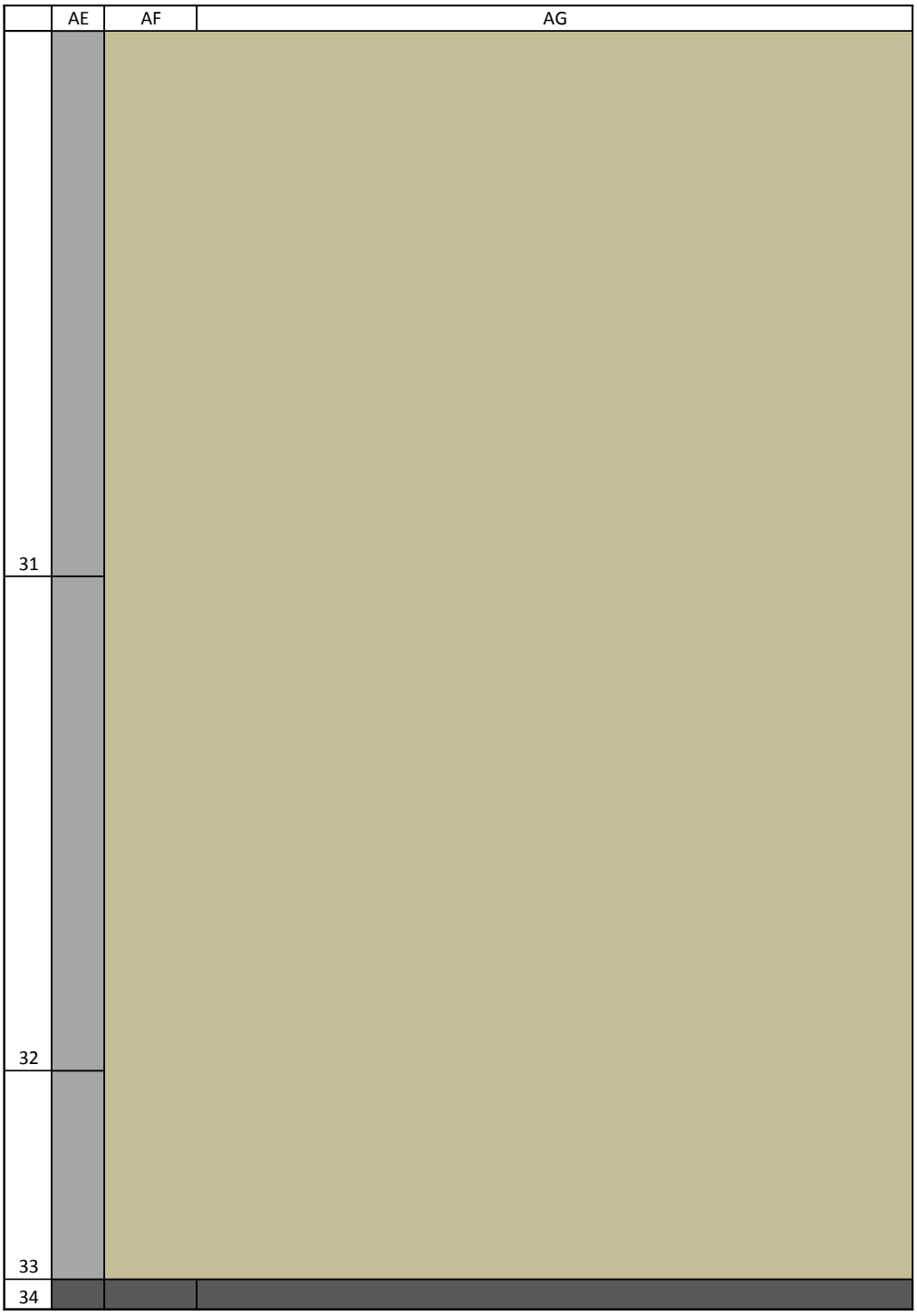
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2	**AB**			
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**
4	**AUTHORITY TO MAKE REGULATIONS**			
5	Pipeline Act	Part 2, Section 3(1)(a-v), pg.7	3(1) The Board may make regulations (a) prescribing the information that is to be included or is to accompany any application under this Act or the regulations; (b) prescribing conditions subject to which the holder of a licence under this Act or a person proposing to construct a pipeline may enter on land of another person in the absence of an agreement to that entry by that other person; (c) regarding matters preparatory to or in connection with the design, construction, testing, operation, maintenance or repair of pipelines; (d) requiring the upgrading of pipelines or portions of pipelines and respecting the standards of upgrading; (e) prescribing the distance or distances from a pipeline or category of pipeline that establish the boundary of the controlled area for that pipeline or category of pipeline; (f) specifying any work, operation or activity that results in a disturbance of the earth not to be a ground disturbance; (g) respecting matters preparatory to or in connection with any ground disturbance; (h) prescribing the distance from the area of a ground disturbance within which the duties and responsibilities prescribed in section 32 apply; (i) respecting approvals required under section 42; (j) regarding equipment, materials and installations that may be used in any pipeline or in any works, fittings, machinery or plant connected with any pipeline; (k) respecting the construction, operation, testing, maintenance and repair of pipelines; (l) respecting the discontinuation, abandonment and removal of pipelines, including the circumstances under which a pipeline must be discontinued, abandoned or removed, the timing of such discontinuation, abandonment or removal and the manner in which discontinuation, abandonment and removal are to be carried out; (m) respecting discontinuation costs, abandonment costs and reclamation costs in respect of pipelines; (n) as to the inspection of pipelines both during and after construction; (o) prescribing the measures to be taken to identify and protect from public access any pipeline or installation; (p) prescribing the measures to be taken to identify and locate a pipeline and protect the pipeline from any ground disturbance or proposed ground disturbance; (q) defining the changes that may be made with respect to a pipeline without application to the Board; (r) requiring and prescribing tests and surveys at any time; (s) requiring the submission to the Board of information obtained by tests or surveys; (t) respecting the submission to the Board and the licensee whose pipeline may be affected by a ground disturbance of any information relating to the ground disturbance that the Board may require; (u) respecting the transfer of licences; (v) respecting the eligibility requirements in order to become and remain a licensee or agent; ...	The ERCB makes regulations re: transfer of licences; testing, operation, maintenance, repair, ground disturbance, discontinuation, abandonment, removal, inspection, identifying and locating of pipelines. Tests and surveys, submission of information, forms, methods and facilities for the measurement of any substance, recording the measurement, to meet any special case.

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6	Pipeline Act	Part 2, Section 3(1)(w-hh), pg.7	3(1) The Board may make regulations ..... (w) respecting the definition of "resident" for the purpose of section 19; (w.1) respecting the exemption of licensees or classes of licensees from the application of some or all of the requirements in section 19, subject to any terms and conditions provided for in the regulations, including the substitution of any other requirements; (x) as to the sale, leasing or change of operator of a pipeline; (y) exempting a pipeline or class of pipeline from any provision of this Act or the regulations; (z) prescribing alternate provisions that may apply to a pipeline or class of pipeline exempted by a regulation made under clause (y); (aa) prescribing (i) methods and facilities to be utilized for the measurement of any substance transmitted by a pipeline, (ii) methods of recording the measurement, and (iii) standard conditions to which the measurements are to be converted; (bb) governing the maintenance of records and providing for their submission to the Board; (cc) governing the making of reports and the authority or person to whom they are to be made; (dd) as to when and to whom information contained in records, reports and information submitted to or acquired by the Board under this Act may be made available; (ee) to meet any special case that may arise and for which no provision is made in this Act; (ff) prescribing or approving forms to be used under this Act or the regulations either generally or for a particular case; (gg) establishing a schedule of fees (i) pertaining to applications, or (ii) for any other service provided by the Board; (hh) respecting compliance with and enforcement of ALSA regional plans.	
7	Pipeline Act			
8	**COMPLIANCE CSA / DIRECTIVE**			
9	Pipeline Regulation	Part 2, Section 9, pg 13	9(1) A reference in this Regulation to a code or standard is to the latest published edition of the code or standard issued by the Canadian Standards Association (CSA). (2) Except as otherwise specified by this Regulation, the following standards are in force: (a) CSA Z245.11, Steel Fittings; (b) CSA Z245.12, Steel Flanges; (c) CSA Z245.15, Steel Valves; (d) CSA Z662, Oil and Gas Pipeline Systems. (3) Except as otherwise specified by this Regulation, the minimum requirements for the design, construction, testing, operation, maintenance, repair and leak detection of pipelines are set out in CSA Z662. (4) The leak detection requirements contained in Annex E of CSA Z662 are mandatory for liquid hydrocarbon pipelines.	Reference to standards always includes the most recent published version. Minimum requirements for testing, operation, maintenance, and leak detection are set out in *CSA Z662*, unless outlined in the Regulation.
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11	Pipeline Regulation	Part 1, Section 1.2, pg 10	1.2(1) A licensee shall comply with the requirements of Directive 077. (2) Subject to section 79(3), a licensee shall comply with the requirements of Directive 060.	licensees must comply with *Directives 077* and *060.*
12	**BOARD INVESTIGATIONS & INQUIRIES**			
13	Pipeline Act	Part 3, Section 4, pg 11	4 The Board, when required by the Lieutenant Governor in Council shall, or on its own motion may, inquire into, examine and investigate any matter relating to ... (b)the observance of safe and efficient practices in the construction, operation, discontinuation and abandonment of pipelines; (c) the observance of safe and efficient methods in any work, operations or activities when a ground disturbance in a controlled area is being undertaken;	The ERCB may examine or investigate the safety and efficiency of operation, discontinuation, abandonment or ground disturbance.
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15	Pipeline Act	Part 3, Section 5, pg 11	5(1)At any reasonable time, a member of the Board or a person authorized by the Board; (d) may make inspections, investigations or tests (i) of pipelines, and (ii) in controlled areas, and (e) may inspect all books, records and documents pertaining to the construction, operation and maintenance of pipelines or the undertaking of a ground disturbance.	The ERCB can inspect, investigate, or test pipelines; and inspect all documentation related to operation and maintenance or ground disturbances at any time.

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17	Pipeline Act	Part 6, Section 34(2), pg 23	34(2) The Board may at any time require the licensee of a pipeline to make inspections, investigations or tests of the pipeline and may prescribe the manner in which they are to be made.	The ERCB can order an analysis of the pipeline substance; or, the licensee to inspect, investigate or test the pipeline, and choose the manner in which tests are made.
18	**REQUEST SAMPLE**			
19	Pipeline Act	Part 6, Section 34(1), pg 23	34(1) The Board may order that a representative sample of the substance being transmitted by a pipeline be taken and analyzed by a person it determines.	The ERCB can order an analysis of the pipeline substance.
20	Pipeline Regulation	Part 4, Section 51, pg 27	51 A licensee shall submit to the Board on request (a) samples of materials used in the construction of a pipeline, (b) cut-outs from the pipeline, and (c) samples of defective materials.	The licensee must submit any material samples that the ERCB requests.
21	**CONTRAVENTION OR HAZARDS**			
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23	Pipeline Act	Part 5, Section 29 (1,2), pg.20	29(1) Where it appears to the Board or its authorized representative that in the construction or operation of a pipeline or in the undertaking of a ground disturbance there has been or is a contravention of this Act, the regulations, a licence or an order or direction of the Board, or that a method or practice employed or any equipment or installation at a pipeline or in a controlled area is improper, hazardous, inadequate or defective, (a) the Board or its representative may order that the construction or operation of the pipeline, or the ground disturbance, is suspended and shall not be resumed until (i) the contravention ceases or this Act or the regulation, licence or order or direction of the Board is complied with, (ii) approved methods or practices are employed or adopted, (iii) remedial measures are taken, or (iv) proper, safe and adequate equipment is used, (b) the Board or its representative may order that the construction or operation of the pipeline or the ground disturbance be suspended until further order, or (c) the Board may call an inquiry. (2) Where a representative of the Board makes an order under subsection (1)(a) or (b), the representative shall, as soon as possible, report to the Board and so advise in writing the licensee, if any, or person responsible for the ground disturbance, setting out the reasons for the representative's actions	If there is a contravention to the Act, regulations, licence or order during operation or ground disturbances, or if anything is hazardous/inadequate, etc., the Board can order a suspension with no resumption until the issue is fixed, or until further order. The ERCB can also call an inquiry.
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26	Pipeline Act	Part 8, Section 51, pg 29	51(1) Where a licensee (a) contravenes or fails to comply with an order of the Board, ... and the Board considers it in the public interest to do so, the Board may make a declaration setting out the nature of the contravention, failure to comply or debt and naming one or more directors, officers, agents or other persons who in the Board's opinion were directly or indirectly in control of the licensee at the time of the contravention, failure to comply or failure to pay. (2) The Board may not make a declaration under subsection (1) unless it first gives written notice of its intention to do so to the affected directors, officers, agents or other persons and gives them at least 10 days to show cause as to why the declaration should not be made. (3) Where the Board makes a declaration under subsection (1), the Board may, subject to any terms and conditions it considers appropriate, (a) suspend any operations of a licensee under this Act or the Oil and Gas Conservation Act or of an approval holder under the Oil and Gas Conservation Act, ... (c) refuse to consider an application to transfer a licence under this Act or the Oil and Gas Conservation Act or an approval under the Oil and Gas Conservation Act, (4) This section applies in respect of a contravention, failure to comply or debt whether the contravention, failure to comply or debt arose before or after the coming into force of this section.	If a licensee contravenes or does not comply with ERCB orders, the ERCB can declare the issue, and name directors, officers or agents. Ten days written notice to declare must be given by the ERCB. After the declaration, the ERCB can suspend operations and refuse transfer applications.
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29	**INQUIRIES**			
30	Pipeline Act	Part 5, Section 30, 31, pg 21	30 Where an order is made under section 29(1)(a) or (b) for the suspension of the construction or operation of a pipeline or of a ground disturbance within a controlled area, the person to whom the order is directed may request an inquiry and, if the person does so, the Board shall hold an inquiry within 5 days, exclusive of holidays, after the date of receipt of the request 31(1) Within 15 days after the conclusion of an inquiry pursuant to section 29 or 30, the Board may (a) allow the construction or operation of the pipeline, or the ground disturbance within a controlled area, to continue or resume subject to any conditions that the Board may prescribe, (b) order the continued suspension of the construction or operation of the pipeline, or the ground disturbance within a controlled area, until the Board makes an order to the contrary, or (c) in the case of the construction or operation of a pipeline, cancel or suspend the licence for the pipeline. (2) On the cancellation or suspension of a licence by the Board, no construction shall be carried out and no oil, gas, water or other substance shall be transmitted in the pipeline until the licence has been reinstated or a new licence has been issued by the Board except such as the Board authorizes to maintain the facilities in a state whereby operations can be carried out in accordance with this Act.	When a suspension order has been issued, the person may request an inquiry, and the Board will hold it within 5 days. Once concluded for 15 days, it may be allowed to resume, continued suspension ordered, or license cancelled/suspended.
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	E	F	G	H	I
2	**BC**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
4					
5	Oil and Gas Activities Act	Section 99(1), pg 53	99 (1) The Lieutenant Governor in Council may make regulations as follows: (a) prescribing activities for the purposes of the definition of "oil and gas activity" in section 1 (2); (b) prescribing substances for the purpose of paragraph (e) of the definition of "pipeline" in section 1 (2) and prescribing exclusions for the purposes of paragraph (h) of that definition; (c) prescribing regulations under a specified enactment for the purposes of paragraph (f) of the definition of "specified provision" in section 1 (2); (d) prescribing circumstances for the purposes of section 6 (2); (e) respecting the application of the Public Inquiry Act for the purposes of section 12; (f) prescribing authorizations for the purposes of section 18 (2) (c) (i); (g) prescribing periods of time for the purposes of section 32; (h) respecting the disclosure of records, reports and plans referred to in section 38; (i) requiring that natural gas be gathered, and processed if necessary, and that the natural gas or liquid hydrocarbons extracted be marketed or injected into an underground reservoir for storage or for any other purpose; (j) prescribing actions for the purposes of section 53; (k) prescribing decisions for the purposes of the definition of "determination" in section 69; (l) prescribing activities and methods for the purposes of section 75; (m) prescribing works, activities and distances for the purposes of section 76 (1) and requirements for the purposes of section 76 (1) (e); (m.1) respecting how costs incurred in relation to (i) the construction of anything referred to in section 76 (1) (a), (ii) the carrying out of an activity under section 76 (1) (b), or (iii) the relocation referred to in section 76 (5) (a) and any actions referred to in section 76 (5) (b) are to be allocated between the pipeline permit holder and the person doing anything referred to in subparagraphs (i) to (iii) of this paragraph; (n) respecting the application of the Mines Act to the exploration, development and production of oil sand, oil sand products, oil shale and oil shale products; (o) respecting surveying to be carried out with respect to an oil and gas activity; (p) respecting information for the purposes of section 77. (q) respecting the carrying out of activities under a master licence to cut, as defined in section 47.4 (1) of the Forest Act, by a permit holder, an applicant for a permit or a person carrying out an activity under an approval, as defined in section 9 (1) of this Act;	Governor may make regulations prescribing activities for the operation of a pipeline and prescribe substances to be conveyed or excluded in a pipeline.	AB is EQUIVALENT to BC in that the Board can make regulations for all matters related to a pipeline. While not all details listed are identical, AB adds "to meet any special case that may arise and for which no provision is made in this Act" and BC adds " the carrying out of an oil and gas activity, including, without limiting this....".

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6	Oil and Gas Activities Act	Section 111(1), pg 60	Oil and gas activities 111 (1) The board may make regulations respecting the carrying out of an oil and gas activity, including, without limiting this, regulations as follows: (a) if the commission is satisfied that there is a danger to the public, increasing a specified distance prescribed under section 97 (a), and, if a prohibition has not been prescribed under that section with respect to any area of the province, prescribing a prohibition for that area of the type referred to in that section; (a.1) respecting actions a permit holder and a person carrying out an oil and gas activity must carry out or refrain from carrying out on completion of or while completing an oil and gas activity; (b) respecting equipment and techniques that must be used when carrying out an oil and gas activity; (c) respecting waste produced directly or indirectly by the carrying out of an oil and gas activity; (d) respecting the carrying out of geophysical exploration; (e) respecting the drilling, operation and abandonment of wells, including, without limiting this, regulations respecting (i) the measures to be taken and the methods of operation to be used before drilling begins and during drilling or operation, (ii) the drilling of multizone wells, (iii) the conditioning and reconditioning of wells by mechanical, chemical or explosive means, (iv) water source wells, and (v) spacing areas in which wells are to be completed; (f) respecting the exploration for and development, use and abandonment of storage reservoirs; (g) respecting the exploration for and development and production of oil sand, oil sand products, oil shale and oil shale products; (h) respecting the construction, operation and abandonment of a pipeline, including, without limiting this, regulations respecting measures to be taken (i) to restore the land and surface of land after construction or removal of a pipeline, (ii) to monitor and maintain the integrity of the pipeline and equipment, and (iii) on suspension of operation of a pipeline; (h.1) respecting the construction, operation and abandonment of a facility used for the purposes of producing, gathering, processing or storing petroleum, natural gas, water or a substance referred to in paragraph (d) or (e) of the definition of "pipeline" in section 1; (i) and (j) ... (k) determining whether a field or pool designated under section 49.1 may be operated for the production of petroleum, natural gas, or both; (l) designating the area that is to be allocated to a well in connection with fixing allowable production; (m) controlling and regulating the production of petroleum, natural gas and water by restriction, proration or prohibition; (n) requiring the disposal of water produced into an underground formation or otherwise and authorizing the commission to specify the terms according to which the disposal must be done; (o) respecting the management of petroleum or natural gas fields, pools or zones; (p) respecting the maintenance of a pipeline, facility, well, road prescribed under subsection (2) or other structure, equipment or thing.	The Board can regulate oil and gas activities; including, but not limited to: ROW (97a), actions of a permit holder, equipment, techniques, operation, abandonment, removal, monitoring and maintenance.	
7	Oil and Gas Activities Act	Section 112(1)(b,d), pg 61	General 112 (1) The board may make regulations as follows: ....(b) respecting the taking of samples and the conducting of tests and analyses by permit holders; ....(d) prescribing records, reports and plans for the purposes of section 38 and respecting the maintenance and submission of those records, reports, and plans;		
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9	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 3(1), pg 2	Standards 3 (1) Subject to subsection (2), a pipeline permit holder must not design, construct, operate or maintain any of the following except in accordance with CSA Z662: (a) the pipeline that is the subject of the permit;	All pipelines subject to a permit, or pipelines constructed under agricultural land must be operated and maintained in accordance with *CSA Z662*.	AB is EQUAL to BC as both require accordance with CSA.
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	E	F	G	H	I
11	Oil and Gas Activities Act	Section 112(1)(a), pg 61	General 112 (1) The board may make regulations as follows: (a) adopting by reference, in whole or in part and with any changes the board considers necessary, any regulation, code, standard or rule (i) enacted as or under a law of another jurisdiction, including a foreign jurisdiction, or (ii) set by a provincial, national or international body or any other code, standard or rule making body, as the regulation, code, standard or rule stands at a specific date, as it stands at the time of adoption or as amended from time to time; as the regulation, code, standard or rule stands at a specific date, as it stands at the time of adoption or as amended from time to time; ...		AB is EQUAL to BC as AB equires compliance with *Directive 077/060*, while BC allows for the adopting of regulations, codes, standards etc.
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13	Oil and Gas Activities Act	Section 12 (1), pg 12	Inquiries and recommendations 12 (1) At the request of the Lieutenant Governor in Council, the commission must, at the places and times and in a manner the Lieutenant Governor in Council considers advisable, (a) make inquiries, conduct investigations and prepare studies and reports on any matter within the scope of this Act, and (b) recommend to the Lieutenant Governor in Council any measures the commission considers necessary or advisable in the public interest related to oil and gas activities.		AB is EQUAL to BC in that the Governor may order the Board/Commission, or the Board may choose to hold an investigation to any matter related to the pipeline.
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15	Oil and Gas Activities Act	Section 57 (4), pg 36	Entry and inspection or audit 57 (4) An official who enters on land or premises under this section may (a) inspect or audit anything or any activity that is reasonably related to the purpose of the inspection or audit, (b) take samples and carry out tests and examinations, (c) require production for the purposes of inspection or audit or copying of (i) a permit or authorization that is required for the activity, and (ii) a record required to be kept under the Act or the regulations, and (d) make inquiries the official considers necessary.	An official may inspect or audit anything or activity that is reasonably related to the purpose. This includes taking samples, carrying out tests, requiring production or anything the official deems necessary.	EQUAL.

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17	Oil and Gas Activities Act	Section 49 (4), pg 31	49(4) Without limiting subsection (3) (b), an order under subsection (1) may specify any of the following requirements: … (f) that a person conduct tests, take samples, conduct analyses and submit records and information to the commission; …		
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19	Oil and Gas Activities Act	Section 57 (4), pg 36	Entry and inspection or audit 57 (4) An official who enters on land or premises under this section may … (b) take samples …	Official can take sample.	AB is EQUAL to BC in that a sample may be taken.
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23	Oil and Gas Activities Act	Section 26, pg 17	Actions by commission respecting permit 26 (1) The commission may .... (b) suspend a permit or a permission specified in a permit, (c) cancel a permit or a permission specified in a permit, or (d) amend a permit. (2) Without limiting the authority of the commission under subsection (1), the commission may make a decision under subsection (1) if the applicant or permit holder does any of the following: (a) contravenes or has contravened (i) this Act, the regulations, a permit, an authorization or an order issued under this Act, or (ii) the Petroleum and Natural Gas Act or regulations made under that Act; (b) fails to meet or no longer meets any of the conditions of section 24 (4); (c) fails to meet or no longer meets the requirements prescribed for the purposes of section 25 (1), if any; (d) begins an oil and gas activity permitted by a permit but then fails to carry out or continue that oil and gas activity; (e) engages in or has engaged in a pattern of conduct that shows, in the commissioner's opinion, that the person is unfit to have a permit; (f) is or has been convicted of an offence under (i) this Act or any other enactment, or (ii) a law enacted by the government of Canada, another province of Canada or a foreign jurisdiction for conduct that shows, in the commissioner's opinion, that the person is unfit to have a permit.	The commission may suspend, cancel or amend a permit if a permit holder is not compliant with the Act/regulations/order/permit/ or fails to meet conditions/requirements, is unfit to have a permit, or has been convicted .	AB is HIGHER than BC as in AB where it appears the Act or regulations etc. is being/have been contravened, or is hazardous etc, the activity is suspended until a Board order is complied with, or the hazard fixed, or until further order, whereas in BC a suspension can be ordered if there is/has been a contravention. This appears to allow AB to act faster as the issue does not have to be confirmed before a suspension. AB is slightly HIGHER in that If the order made above has not been complied with, the Board may make a declaration of the details after giving ten days written notice, and can then subject to ANY terms and conditions, suspend ANY operation of the License, whereas in BC, an order with requirements can be given and, if not followed, a permit can be cancelled, suspended or amended.
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26	Oil and Gas Activities Act	Section 49 (1),(4), pg 30	49 (1) An official may, in writing, issue to a person carrying out an oil and gas activity or a related activity an order under this section with respect to those activities or any of the person's obligations under the Act or the regulations or the person's permit or authorization, if any, if, in the opinion of the official, (a) the person fails to comply with the Act, the regulations, a previous order made under the Act, or the person's permit or authorization, or (b) the order is necessary (i) to mitigate a risk to public safety, (ii) to protect the environment, or (iii) to promote the conservation of petroleum and natural gas resources. ..... (4) Without limiting subsection (3) (b), an order under subsection (1) may specify any of the following requirements: (a) that a person must apply to obtain or amend a permit or an authorization in accordance with the Act and the regulations; (b) that a person remedy a failure referred to in subsection (1) (a); (c) that a person repair damage to the environment; (d) that a person suspend or resume an oil and gas activity or any aspect of an oil and gas activity; (e) that a person use a specified method to carry out an oil and gas activity; (f) that a person conduct tests, take samples, conduct analyses and submit records and information to the commission; ..... (l) that a person restrict or cease production of petroleum, natural gas or water; (m) that natural gas be gathered, and processed if necessary, and that the natural gas or liquid hydrocarbons extracted be marketed or injected into an underground reservoir for storage or for any other purpose; (n) that a pipeline permit holder alter or divert its pipeline; .... (p) that a permit holder arrange for an independent audit of the permit holder's operations and activities and have the auditor's report submitted to the official.	An order can be issued by an official if a person is not compliant with Act/regulations/order/permit/ authorization, or public safety/environment/natural resources are at risk. Examples of orders listed.	AB appears to have the ability to impact a licensee's operations on a larger scale. AB is also STRONGER as the lowest action taken is suspension; whereas in BC, it is variable.
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30	Oil and Gas Activities Act	Section 50 (1), pg 33	Commission may carry out action 50 (1) If an official issues an order under section 49 (1) and the person to whom the order was issued has not complied with the order by the date specified in the order under section 49 (3) (c), the commission may do one or more of the following: (a) by order in writing, restrict or prohibit the person from carrying out an action referred to in the order; (b) after giving the person an opportunity to be heard, carry out an action referred to in the order; (c) by order in writing, require the person to pay to the commission the amount of all direct and indirect costs the commission determines were reasonably incurred in carrying out the action referred to in paragraph (b). (2) An order referred to in subsection (1) (c) must provide the person to whom it is issued with an accounting of the expenditures relating to the action referred to in subsection (1) (b).	If the person does not comply with an order by date specified, the commission may prohibit the action referred to in order, allow the person to be heard before carrying out an action and require person pay expenses associated with that action (an accounting of expenditures must be provided).	AB is HIGHER than BC. In AB, after an order has been made the person may request an inquiry. In BC, if the order was not complied with, the action of issue may be restricted/prohibited, AND/OR, before the commission takes the action in the order, the person can be heard. This may mean further restrictions imposed before the person can be heard. As well, AB gives specific timelines for the inquiry that BC (in the Act and regulations) does not.
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	J	K	L	M	N
2	**Saskatchewan**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5	The Pipelines Act	Part V, Section 25(1)(a-o), pg 12	25(1) The Lieutenant Governor in Council may make regulations: (a) defining, enlarging or restricting the meaning of any word or expression used in this Act but not defined in this Act; (b) exempting any person, any pipeline or any portion of a pipeline from this Act or any provision of this Act; (c) prescribing works, operations and activities for the purpose of subclause 2(e)(iii); (d) prescribing the terms on which a person may enter lands pursuant to section 13; (e) for the purposes of subsection 14(2), prescribing a distance from a provincial highway or from a road other than a provincial highway within which no pipeline shall be constructed; (f) prescribing the persons or classes of persons to be served with notice of application for a licence, the form of the notice and the method of service; (g) prescribing the specifications and standards for the construction, alteration, operation and abandonment of pipelines and the discontinuation of the operation of pipelines; (h) prescribing measures for the protection of life, property or the environment to be taken in the construction, alteration, operation and abandonment of pipelines and the discontinuation of the operation of pipelines; (i) providing for the inspection of pipelines, prescribing and governing the circumstances in which the minister or a representative of the minister may enter lands or premises for the purpose of inspecting pipelines or any buildings, installations, structures or lands that are ancillary to pipelines and governing the costs of the inspections and the persons by whom the costs are to be borne; (j) requiring and governing the testing and surveying of pipelines; (k) prescribing the maximum pressure to which any pipeline may be subjected; (l) prescribing the measures to be taken to mark, identify, locate and protect from public access any pipeline or installation used in connection with the pipeline; (m) prescribing and governing the methods and equipment to be used for the measurement of any substance transmitted in any pipeline, the methods of recording the measurement and prescribing the standard conditions at which the measurements are to be made; (n) requiring the reporting of pipeline ruptures, spills and fires and governing the reporting procedures; 13 PIPELINES, 1998 c. P-12.1 (o) requiring the upgrading, removal or abandonment of pipelines, portions of pipelines or any works, fittings, machinery or plant associated with a pipeline and prescribing and governing standards for upgrading, removal or abandonment;	Lieutenant Governor in Council may make regulations which: • exempt any person or pipeline; • Prescribe work, operation or activities, specs and standards for operation, abandonment, discontinuation, or measures to protect life, property or environment, inspection, circumstances of entering land, marking/locating pipeline, or maximum operating pressure (MOP); methods and equipment for substance measurement, recording and conditions • Require keeping of records, record form and content, record submission, testing, surveying, reporting of ruptures, submission of records; reporting of pipeline ruptures, spills and fires; upgrading, removal or abandonment. • Prescribing any matter or thing that is required, authorized or necessary, or anything that is considered necessary for carrying out the intent of the act.	AB is EQUIVALENT to SK in that the Board/Governor can make regulations for all matters related to a pipeline. While not all details listed are identical, AB adds "to meet any special case that may arise and for which no provision is made in this Act" and SK adds "respecting any matter or thing ... necessary for carrying out the intent of this Act....".

	J	K	L	M	N
6	The Pipelines Act	Part V, Section 25(1)(p-v), pg 12	25(1) The Lieutenant Governor in Council may make regulations: .....(p) prescribing the form and content of applications, plans and profiles to be submitted; (q) prescribing fees for: (i) applications for licences and for any other applications and for orders and any other things made, required or done pursuant to this Act; and (ii) any other service or information provided pursuant to this Act or the regulations; (r) requiring the keeping of records by licence holders or any other persons engaged in an activity governed by this Act or the regulations, and governing the form and content of those records; (s) prescribing the conditions under which a common carrier must provide service; (t) requiring the submission of records and other information to the minister and governing the manner of submission; (u) prescribing any matter or thing required or authorized by this Act to be prescribed in the regulations; (v) respecting any matter or thing that the Lieutenant Governor in Council considers necessary for carrying out the intent of this Act.		
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9	The Pipelines Regulations	Section 12(1),(5), Pg 6	Requirements re design, etc. 12(1) The minimum requirements for the design, construction, testing, operation, maintenance and repair of pipelines shall be in accordance with the most recent version of CSA Standard Z662, Oil and Gas Pipeline Systems, unless otherwise approved by the minister ... (5) If the appropriate CSA standard requires that a pipeline be altered .....due to a revision to the standard, the minister may exempt the pipeline from the required modifications if the operator demonstrates that the pipeline is suitable and safe for continued operation under the original standard.	Minimum requirement for testing operation, maintenance and repair shall be done under the most recent version of *Z662*.	AB is EQUAL to SK as both require accordance with CSA. SK also mentions the minister may exempt an existing pipeline from a revised CSA standard.
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	J	K	L	M	N
11	The Pipelines Act	Part V, Section 25(2), pg 13	(2) Any regulation made pursuant to this section may adopt by reference, in whole or in part, as amended from time to time or otherwise, with any changes that the Lieutenant Governor in Council considers necessary, any relevant code, standard or law, and may require compliance with any code, standard or law so adopted.		AB is EQUAL to SK as AB equires compliance with *Directive 077/060*, while SK allows for the adopting of laws, codes, standards etc.
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13	The Pipelines Act	Part V, Section 23, pg 11	Hearing, investigation or inquiry by Board 23(1) The minister may, on the minister's own motion or on the application of any person, order the Board to hold a hearing, investigation or inquiry with respect to any matter related to this Act or the regulations and make recommendations to the minister. (2) The power to conduct a hearing, investigation or inquiry pursuant to this section is in addition to the Board's authority to conduct a hearing, investigation or inquiry pursuant to any other provision in this Act. (3) Sections 7.11, 7.2 and 7.3 to 7.9 of The Oil and Gas Conservation Act apply, with any necessary modification, to the Board in exercising any of its powers or carrying out any of its duties pursuant to this Act	The minister may order the Board to hold a hearing, investigation or inquiry regarding any aspect related to this Act or regulation. The Board may also conduct a hearing, investigation or inquiry of its own accord.	AB is EQUAL to SK in that the Governor/minister may order the Board, or the Board may choose to hold an investigation to any matter related to the pipeline.
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15	The Pipelines Regulations	Section 16(1),(2), Pg 7	Inspections 16(1) All pipelines are subject to a visual inspection by a representative of the minister at any time during construction or operation. (2) Notwithstanding subsection (1), the representative of the minister must provide the operator with 48 hours' notice if the inspection is to involve pressure testing, adjustments to valves or pumping speeds or similar activities and the operator must be present during those activities. (3) The representative of the minister must provide written notification to the operator of any corrective measures to be taken by the operator except in the case of a rupture, break, leak or damage by a third party that requires immediate action or repair.	A representative of the minister may visually inspect any pipeline during construction or operation. A 48 hr notice must be provided if will involve pressure testing or adjustments to pump speeds or similar activities and the operator must be present. Written notification of corrective measure must be provided by the representative of the minister except in the case of: rupture, break etc.	AB is EQUAL to SK in that both allow for inspections at any time. AB EXCEEDS SK in that it gives more detail as to type of inspections and required information.

	J	K	L	M	N
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19					AB is HIGHER than SK in that AB may order/request samples, SK (in the Act and regulations) does not have this provision.
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	J	K	L	M	N
23	The Pipelines Act	Part II, Section 11, pg 6	Notice of contravention 11 Where a licence holder contravenes any provision of this Act or the regulations or any term or condition in the licence, the minister may give written notice of the contravention to the holder, requiring the holder to remedy the contravention within a specified time.	When the Act or the regulations are contravened by a licence holder, the minister is to provide written notice and require a remedy within a specified period of time.	AB is HIGHER then SK in that where it appears the Act, regulations or terms of the license etc. has/have been contravened, or something is hazardous etc, the activity is suspended until a Board order is complied with/hazard fixed/further order, whereas in SK a notice requiring remedy is given if there is/has been a contravention. This appears to allow AB to act faster and with more authority as the issue does not have to be confirmed. NOTE: SK does allow for suspension where there has been repeated contraventions. AB is slightly HIGHER in that If the order made above has not been complied with, in AB the Board may make a declaration of the details after giving a 10 day written notice, and can the,n subject to ANY terms and conditions, suspend ANY operation of the licensee, whereas in SK a licence can be cancelled, suspended or amended. This appears to give AB the ability to impact a licensee's Operations on a larger scale. AB is also STRONGER as the lowest action taken is suspension, whereas in SK it is notice to remedy.
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26	The Pipelines Act	Part II, Section 12(1),(3), pg 7	Amendment, suspension, cancellation of licences 12(1) The minister may amend or suspend a licence where the amendment or suspension is necessary for the purposes of public safety or the safety of any person or for the protection of property or the environment. ..... (3) The minister may amend, suspend or cancel a licence where: (a) the amendment, suspension or cancellation is agreed to by the licence holder; (b) the licence holder fails to remedy a contravention within the time specified in a notice given pursuant to section 11; or (c) the licence holder repeatedly contravenes one or more provisions in this Act or the regulations or terms or conditions in the licence.	The minister may amend or suspend a license for public safety or to protect property or environment. They may amend if pipeline is required to be diverted or relocate. They may amend, suspend or cancel when agreed to by licensee; when contravention is not remedied. Amendments, suspensions or cancellations will not be made unless the licensee has had reasonable time to respond/correct. When notice is not given, the minister will notify the licence holder as soon as possible and will provide a chance for response within 15 days.	AB appears to have the ability to impact a licensee's operations on a larger scale.
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30	The Pipelines Act	Part II, Section 12(4-6), pg 7	(4) Unless, in the minister's opinion, action is urgently required, the minister shall not amend, suspend or cancel a licence pursuant to clause (3)(b) or (c) unless the licence holder has been given a reasonable opportunity to make representations to the minister or an official chosen by the minister, in a form determined by the minister, concerning the proposed amendment, suspension or cancellation. (5) Where the minister amends, suspends or cancels a licence without giving the licence holder an opportunity to make representations to the minister or an official chosen by the minister in accordance with subsection (4), the minister shall notify the licence holder as soon as possible that the licence has been amended, suspended or cancelled and shall give the licence holder an opportunity to make representations within 15 days after the date of the amendment, suspension or cancellation. (6) For the purposes of section 5, a licence that is suspended pursuant to this section is, for the period of the suspension, deemed not to have been issued.		AB is EQUIVALENT to SK in that after an order has been made, the person/license holder may request an inquiry/make representation. Both provide timelines, in AB the inquiry must be held within 5 days, while in SK, the licence holder is given "reasonable opportunity".
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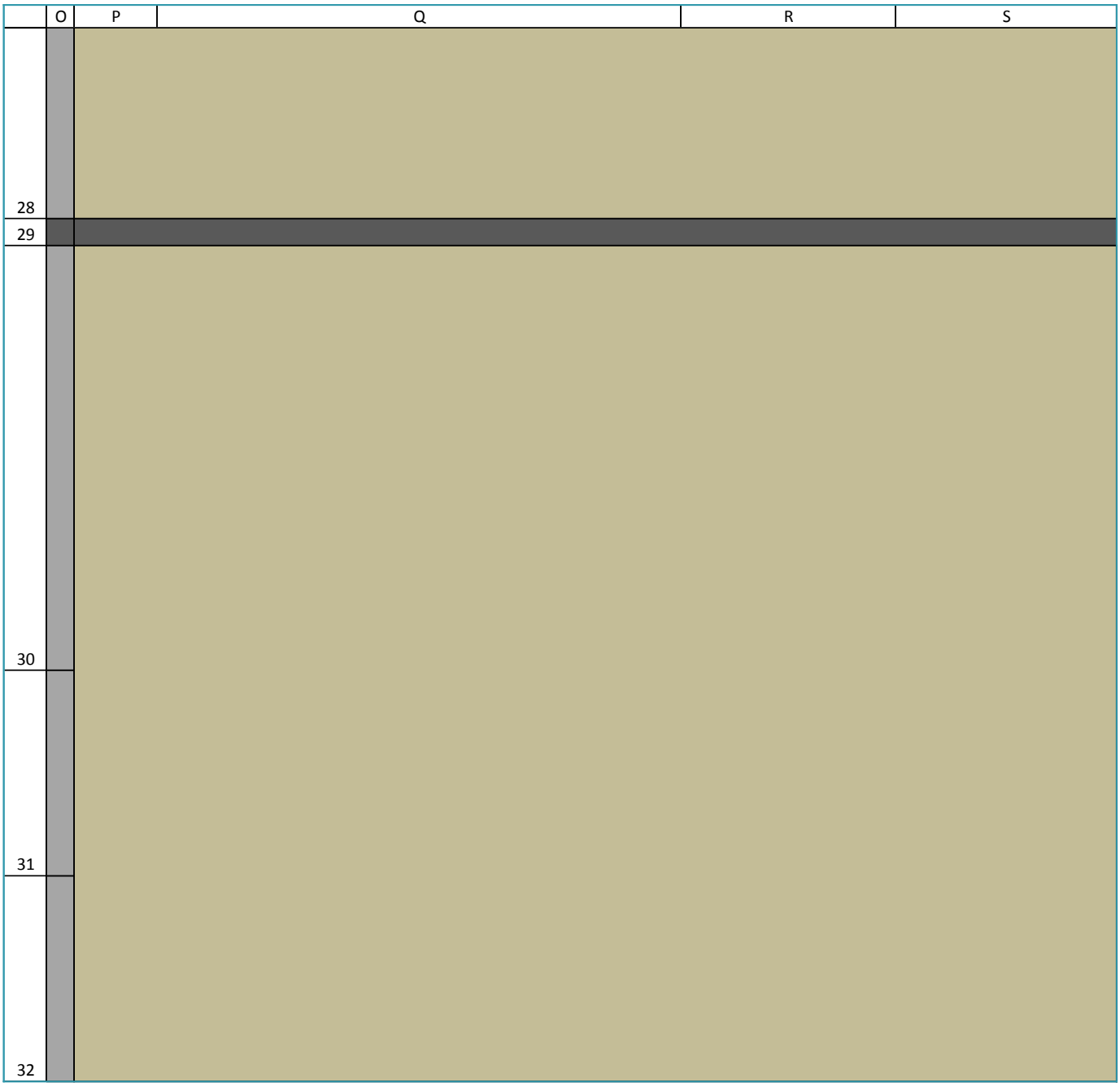
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	T	U	V	W	X
2	**CANADA (NEB)**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5	National Energy Board Act	Part III, Section 48 (2), pg 33	48.(2) The Board may, with the approval of the Governor in Council, make regulations governing the design, construction, operation and abandonment of a pipeline and providing for the protection of property and the environment and the safety and security of the public and of the company's employees in the construction, operation and abandonment of a pipeline. (2.1) The Board may make orders exempting companies from any or all of the provisions of the regulations made under subsection (2). Terms and conditions (2.2) In any order made under subsection (2.1), the Board may impose such terms and conditions as it considers proper.	The Board may make regulations governing the operation and abandonment of a pipeline, providing for protection of property, environment, safety and security in the operation and abandonment of a pipeline.The Board may order an exemption, and may impose any terms and conditions.	AB is basically EQUIVALENT to CAN in that the Board/Governor can make regulations for all matters related to a pipeline. One difference is AB adds "to meet any special case that may arise and for which no provision is made in this Act" and CAN does not make a similar statement.

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6	Onshore Pipeline Regulations	General, Section 5, Pg. 5	5. If a company is required by these Regulations to develop a design, specification, program, manual, procedure, measure or plan, the Board may order amendments to it if the Board considers it necessary for safety or environmental reasons or if it is in the public interest to do so.	If the regulations requires a company to develop a program, manual or procedure, the Board may order amendments if it is necessary for safety or environmental reasons.	
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9	Onshore Pipeline Regulations	General, Section 4, Pg. 4	4. (1) When a company designs, constructs, operates or abandons a pipeline, or contracts for the provision of those services, the company shall ensure that the pipeline is designed, constructed, operated or abandoned in accordance with the applicable provisions of (a) these Regulations; (b) CSA Z276, if the pipeline transports liquefied natural gas; (c) CSA Z341 for underground storage of hydrocarbons; and (d) CSA Z662, if the pipeline transports liquid or gaseous hydrocarbons. (2) Without limiting the generality of subsection (1), the company shall ensure that the pipeline is designed, constructed, operated or abandoned in accordance with the design, specifications, programs, manuals, procedures, measures and plans developed and implemented by the company in accordance with these Regulations. (3) If there is an inconsistency between these Regulations and a standard referred to in paragraph (1)(b), (c) or (d), these Regulations prevail to the extent of the inconsistency.		AB is EQUAL to CAN as both require accordance with CSA standards. CAN also details what to do in the event no standard is laid out.
10	Onshore Pipeline Regulations	General, Section 8, Pg. 5	8. (1) Designs, specifications, programs, manuals, procedures, measures or plans for which no standard is set out in these Regulations shall be submitted by a company to the Board for approval. 8. (2) The Board shall approve a design, specification, program, manual, procedure, measure or plan if (a) it provides for a level of safety or protection at least equivalent to the level of safety or protection generally provided for by a comparable CSA standard, or by another applicable standard; or (b) in the absence of a comparable CSA or other applicable standard, it provides for a level of safety or protection that is adequate in the circumstances.	Any programs, manuals or procedures for which there is no standard must be submitted to the Board for approval. The Board will approve it if it provides for a level of safety to a comparable CSA standard or applicable standard.	

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11					AB REQUIRES compliance with the Directives, CAN (in the Act or regulations) does not make a similar requirement.
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13	National Energy Board Act	Part I, Section 12(1), pg 10	12. (1) The Board has full and exclusive jurisdiction to inquire into, hear and determine any matter ….	The Board can inquire into, hear and determine any matter. NOTE : remainder of Clause listed under Contravention.	AB is EQUAL to CAN in the Board may choose to hold an investigation to any matter related to the pipeline. AB slightly differs in that the Governor can order the Board to investigate, whereas in CAN "The Board has full and exclusive jurisdiction".
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15		Part 6, Section 49, Pg. 17	49. When the protection of property and the environment and the safety of the public and the company's employees warrant it, the Board may direct a company to test, inspect or assess a pipeline in accordance with CSA standards or any other comparable standards.	The Board may direct a company to assess a pipeline in accordance with CSA if warranted to protect property, environment or public safety.	EQUAL

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17	Regulations				
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19					AB MAY ORDER/request samples, CAN (in the Act and regulations) does not have this provision.
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23	National Energy Board Act	Part I, Section 12, 13, pg 10	12. (1) The Board has full and exclusive jurisdiction to inquire into, hear and determine any matter (a) where it appears to the Board that any person has failed to do any act, matter or thing required to be done by this Act or by any regulation, certificate, licence or permit, or any order or direction made by the Board, or that any person has done or is doing any act, matter or thing contrary to or in contravention of this Act, or any such regulation, certificate, licence, permit, order or direction; or (b) where it appears to the Board that the circumstances may require the Board, in the public interest, to make any order or give any direction, leave, sanction or approval that by law it is authorized to make or give, or with respect to any matter, act or thing that by this Act or any such regulation, certificate, licence, permit, order or direction is prohibited, sanctioned or required to be done 13. The Board may (a) order and require any person to do, forthwith, or within or at any specified time and in any manner prescribed by the Board, any act, matter or thing that such person is or may be required to do under this Act, or any regulation, certificate, licence or permit, or any order or direction made or given under this Act; and (b) forbid the doing or continuing of any act, matter or thing that is contrary to this Act or any such regulation, certificate, licence, permit, order or direction.		AB is HIGHER then CAN in that in AB where it appears the Act/Regulations etc has/have been contravened, or something is hazardous etc, the activity is suspended until a Board order is complied with/hazard fixed/further order, whereas in CAN the matter can then be inquired into for a contravention, or work can be suspended by an inpsection officer due to a hazard specifically. AB is slightly HIGHER in that If there has been a contravention of an order, the Board may make a declaration of the details after giving 10 day written notice, and can then subject to ANY terms and conditions, suspend ANY operation of the License, whereas in CAN an order with any terms and conditions can be imposed or any direction, leave, sanction or approval can be made with respect to the license. This appears to give AB the ability to impact a licensee's Operations on a larger scale. AB is also STRONGER as the lowest action taken is suspension, whereas in CAN it is variable.
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25	National Energy Board Act	Part 3, Section 51.1, pg 36	51.1 (1) An inspection officer who is expressly authorized by the Board to make orders under this section may make an order if the inspection officer has reasonable grounds to believe that a hazard to the safety or security of the public or of employees of a company or a detriment to property or the environment is being or will be caused by (a) the construction, operation, maintenance or abandonment of a pipeline, or any part of a pipeline; or (b) an excavation activity or the construction of a facility described in paragraph 49(2)(a). (2) The order may require (a) work associated with the pipeline, excavation activity or facility to be suspended until (i) the hazardous or detrimental situation has been remedied to the satisfaction of an inspection officer, or (ii) the order is stayed or rescinded under section 51.2; and (b) the company or any person involved in the pipeline, the excavation activity or the construction of the facility to take any measure specified in the order to ensure the safety or security of the public or of employees of the company or to protect property or the environment. (3) An inspection officer who makes an order under this section shall, as soon as possible, (a) give written notice of the order to the persons to whom it is directed, including the terms of the order and a statement of the reasons for the order; and (b) report the circumstances and terms of the order to the Board.		
26	National Energy Board Act	Part I, Section 19, pg 15	19. (1) Without limiting the generality of any provision of this Act that authorizes the Board to impose terms and conditions in respect of a certificate, licence or order issued by the Board, the Board may direct in any certificate, licence or order that it or any portion or provision thereof shall come into force at a future time or on the happening of any contingency, event or condition specified in the certificate, licence or order or on the performance to the satisfaction of the Board of any conditions that the Board may impose in the certificate, licence or order, and the Board may direct that the whole or any portion of the certificate, licence or order shall have force for a limited time or until the happening of a specified event .... (2) The Board may, instead of making an order final in the first instance, make an interim order, and may reserve its decision pending further proceedings in connection with any matter.		
27	National Energy Board Pipeline Crossing Regulations, Part II SOR/88-528	Section 13 (1)(a), Pg 6	13. (1) The pipeline company shall immediately report to the Board (a) every contravention of the National Energy Board Pipeline Crossing Regulations, Part I;		AB is LOWER than CAN as in CAN, in the event of unsafe practices during a ground disturbance, the pipeline company or the Board may suspend the permission given by the pipeline company to construct or install a facility or to excavate. In AB, although the licensee or the Board can approve of a ground disturbance, there is only provision for the Board to suspend the permission.

	T	U	V	W	X
28	Crossing Regulations, Part II	Section 14, Pg 7	14. (1) Where the pipeline company or the Board is satisfied that unsafe construction practices have been or are being used, the pipeline company or the Board may suspend, for such period as it considers necessary, the permission given by the pipeline company to construct or install a facility or to excavate. (2) Where a pipeline company suspends its permission pursuant to subsection (1), the pipeline company shall immediately notify the Board of its decision giving its reasons therefor.		
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30	National Energy Board Act	Part 3, Section 51.1-2, pg 36	51.1 (1) An inspection officer who is expressly authorized by the Board to make orders under this section may make an order if the inspection officer has reasonable grounds to believe that a hazard to the safety or security of the public or of employees of a company or a detriment to property or the environment is being or will be caused by..... 51.2 (1) A person to whom an order under section 51.1 is directed may request in writing that the Board review the order. (2) A request for review does not operate as a stay of the order, but the Board may grant a stay pending the review. (3) The Board shall (a) review the circumstances and terms of an order that it is requested to review; (b) confirm, vary or rescind the order; and (c) give notice of its decision to the persons who requested the review.		AB is EQUIVALENT to CAN in that after an order has been made, the person may request an inquiry/review. AB is HIGHER in that it gives specific timelines for the inquiry that CAN (in the Act and regulations) does not.
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	Y	Z	AA
2	**DOT**		
3	**Source**		**DIRECT QUOTE (Level 1)**
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5	Title 49 - US Code - Chapter 601 - Safety	Section 60105 (a), Pg. 10	(a) General Requirements and Submission.— Except as provided in this section and sections 60114 and 60121 of this title, the Secretary of Transportation may not prescribe or enforce safety standards and practices for an intrastate pipeline facility or intrastate pipeline transportation to the extent that the safety standards and practices are regulated by a State authority (including a municipality if the standards and practices apply to intrastate gas pipeline transportation) that submits to the Secretary annually a certification for the facilities and transportation that complies with subsections (b) and (c) of this section.

	Y	Z	AA
6	Title 49 - US Code - Chapter 601 - Safety	Section 60105 (b), Pg. 11	(b) Contents.— Each certification submitted under subsection (a) of this section shall state that the State authority (1) has regulatory jurisdiction over the standards and practices to which the certification applies; (2) has adopted, by the date of certification, each applicable standard prescribed under this chapter or, if a standard under this chapter was prescribed not later than 120 days before certification, is taking steps to adopt that standard; (3) is enforcing each adopted standard through ways that include inspections conducted by State employees meeting the qualifications the Secretary prescribes under section 60107 (d)(1)(C) of this title; (4) is encouraging and promoting the establishment of a program designed to prevent damage by demolition, excavation, tunneling, or construction activity to the pipeline facilities to which the certification applies that subjects persons who violate the applicable requirements of that program to civil penalties and other enforcement actions that are substantially the same as are provided under this chapter, and addresses the elements in section 60134 (b); (5) may require record maintenance, reporting, and inspection substantially the same as provided under section 60117 of this title; (6) may require that plans for inspection and maintenance under section 60108 (a) and (b) of this title be filed for approval; and (7) may enforce safety standards of the authority under a law of the State by injunctive relief and civil penalties substantially the same as provided under sections 60120 and 60122 (a)(1) and (b)(f) of this title.
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9	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart A, 192.11, pg 409	§ 192.11 Petroleum gas systems. (a) Each plant that supplies petroleum gas by pipeline to a natural gas distribution system must meet the requirements of this part and ANSI/ NFPA 58 and 59. (b) Each pipeline system subject to this part that transports only petroleum gas or petroleum gas/air mixtures must meet the requirements of this part and of ANSI/NFPA 58 and 59. (c) In the event of a conflict between this part and ANSI/NFPA 58 and 59, ANSI/NFPA 58 and 59 prevail.
10	Part 192—Transportation of Natural and Other Gas by	Subpart A, 192.9, pg 408	§ 192.9 What requirements apply to gathering lines? (a) Requirements. An operator of a gathering line must follow the safety requirements of this part as prescribed by this section. ... (c) Type A lines. An operator of a Type A regulated onshore gathering line must comply with the requirements of this part applicable to transmission lines, except the requirements in § 192.150 and in subpart O of this part. However, an operator of a Type A regulated onshore gathering line in a Class 2 location may demonstrate compliance with subpart N by describing the processes it uses to determine the qualification of persons performing operations and maintenance tasks. (d) Type B lines. An operator of a Type B regulated onshore gathering line must comply with the following requirements: (1) If a line is new, replaced, relocated, or otherwise changed, the design, installation, construction, initial inspection, and initial testing must be in accordance with requirements of this part

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13	Title 49 - US Code - Chapter 601 - Safety	Section 60117 (a,c), Pg. 27	(a) General Authority.— To carry out this chapter, the Secretary of Transportation may conduct investigations, make reports, issue subpenas, conduct hearings, require the production of records, take depositions, and conduct research, testing, development, demonstration, and training activities and promotional activities relating to prevention of damage to pipeline facilities. The Secretary may not charge a tuition-type fee for training State or local government personnel in the enforcement of regulations prescribed under this chapter. .... (c) Entry and Inspection.— An officer, employee, or agent of the Department of Transportation designated by the Secretary, on display of proper credentials to the individual in charge, may enter premises to inspect the records and property of a person at a reasonable time and in a reasonable way to decide whether a person is complying with this chapter and standards prescribed or orders issued under this chapter.
14	Title 49 - US Code - Chapter 601 - Safety	Section 60106 (b), Pg. 12	(b) Agreements With Certification.—(1) In general.— .... the Secretary may make an agreement with a State authority authorizing it to participate in the oversight of interstate pipeline transportation. Each such agreement shall include a plan for the State authority to participate in special investigations involving incidents or new construction and allow the State authority to participate in other activities overseeing interstate pipeline transportation or to assume additional inspection or investigatory duties.
15	Title 49 - US Code - Chapter 601 - Safety	Section 60105 (b,c), Pg. 11	(b) Contents.— Each certification submitted under subsection (a) of this section shall state that the State authority ..... (3) is enforcing each adopted standard through ways that include inspections conducted by State employees meeting the qualifications the Secretary prescribes under section 60107 (d)(1)(C) of this title;..... (c) Reports.— (1) Each certification submitted under subsection (a) of this section shall include a report that contains ... (B) each accident or incident reported during the prior 12 months by that person involving a fatality, personal injury requiring hospitalization, or property damage or loss of more than an amount the Secretary establishes (even if the person sustaining the fatality, personal injury, or property damage or loss is not subject to the safety jurisdiction of the authority), any other accident the authority considers significant, and a summary of the investigation by the authority of the cause and circumstances surrounding the accident or incident; (C) the record maintenance, reporting, and inspection practices conducted by the authority to enforce compliance with safety standards prescribed under this chapter to which the certification applies, including the number of inspections of pipeline facilities the authority made during the prior 12 months; and ...

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19	Title 49 - US Code - Chapter 601 -	Section 60117 (f), Pg. 28	(f) Testing Facilities Involved in Accidents.— The Secretary may require testing of a part of a pipeline facility subject to this chapter that has been involved in or affected by an accident …
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22	Title 49 - US Code - Chapter 601 -	Section 60106 (e), Pg. 13	(e) Ending Agreements.— (1) Permissive termination.— The Secretary may end an agreement under this section when the Secretary finds that the State authority has not complied with any provision of the agreement.

	Y	Z	AA
23	Title 49 - US Code - Chapter 601 - Safety	Section 60106 (c), Pg. 13	(c) Notification.— (1) In general.— Each agreement shall require the State authority to notify the Secretary promptly of a violation or probable violation of an applicable safety standard discovered as a result of action taken in carrying out an agreement under this section. (2) Response by secretary.— If a State authority notifies the Secretary under paragraph (1) of a violation or probable violation of an applicable safety standard, the Secretary, not later than 60 days after the date of receipt of the notification, shall (A) issue an order under section 60118 (b) or take other appropriate enforcement actions to ensure compliance with this chapter; or (B) provide the State authority with a written explanation as to why the Secretary has determined not to take such actions.
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30	Title 49 - US Code - Chapter 601 - Safety	Section 60106 (e), Pg. 13	(e) Ending Agreements.— … (3) Procedural requirements.— The Secretary shall give notice and an opportunity for a hearing to a State authority before ending an agreement under this section. The Secretary may provide a State an opportunity to correct any deficiencies before ending an agreement. The finding and decision to end the agreement shall be published in the Federal Register and may not become effective for at least 15 days after the date of publication unless the Secretary finds that continuation of an agreement poses an imminent hazard.
31	Title 49 - US Code - Chapter 601 - Safety	Section 60112 (f), Pg. 22	a) General Authority.— After notice and an opportunity for a hearing, the Secretary of Transportation may decide that a pipeline facility is hazardous if the Secretary decides that (1) operation of the facility is or would be hazardous to life, property, or the environment; or (2) the facility is or would be constructed or operated, or a component of the facility is or would be constructed or operated, with equipment, material, or a technique that the Secretary decides is hazardous to life, property, or the environment.
32	Title 49 - US Code - Chapter 601 - Safety	Section 60117 (l), Pg. 28	(l) Safety Orders.—(1) In general.— Not later than December 31, 2007, the Secretary shall issue regulations providing that, after notice and opportunity for a hearing, if the Secretary determines that a pipeline facility has a condition that poses a pipeline integrity risk to public safety, property, or the environment, the Secretary may order the operator of the facility to take necessary corrective action, including physical inspection, testing, repair, or other appropriate action, to remedy that condition.

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2	**ALASKA**		
3	**Source**		**DIRECT QUOTE (Level 1)**
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5	Chapter 42.06 Pipeline Act	Section 42.06.140(a) (1,3,5,8), pg 1	Sec. 42.06.140. General powers and duties. (a) The commission (1) shall regulate pipelines and pipeline carriers in the state; .....(3) may make, prescribe, or require just, fair, and reasonable rates, classifications, regulations, practices, services, and facilities for pipeline carriers; .... (5) may adopt regulations that are necessary and proper to the performance of its duties under this chapter, including regulations governing practices and procedures of the commission; the regulations may not be inconsistent with state law; ...(8) shall require permits for the construction, enlargement in size or operating capacity, extension, connection and interconnection, operation or abandonment of any oil or gas pipeline facility or facilities, subject to necessary and reasonable terms, conditions and limitations;

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9	Chapter 42.06 Pipeline Act	Section 42.06.150, pg 1	Sec. 42.06.150. Powers and duties with respect to federally regulated carriers. AS 42.06.140 applies to oil and gas pipeline carriers regulated under federal law only to the extent not preempted by federal law.
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	AB	AC	AD
11	and Environmental	Section 46.03.020, Pg 1	Sec. 46.03.020. Powers of the department. The department may …. (10) adopt regulations necessary to carry out the purposes of this chapter, including, by way of example and not limitation, regulations providing for (B) safeguard standards for petroleum and natural gas pipeline construction, operation, modification, or alteration;
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13	Conservation	Sec tion 46.04.060, pg 62	Sec. 46.04.060. Inspections. (a) In addition to other rights of access or inspection conferred upon the department by law or otherwise, the department may at reasonable times and in a safe manner enter and inspect oil terminal facilities, pipelines, exploration and production facilities, tank vessels, and oil barges in order to (1) ensure compliance with the provisions of this chapter; or (2) participate in an examination of the structural integrity and the operating and mechanical systems of those vessels, barges, pipelines, and facilities by federal and state agencies with jurisdiction. (b) When the department determines that no federal or state agencies with jurisdiction are performing timely and adequate inspections of an oil terminal facility, pipeline, exploration or production facility, tank vessel, or oil barge, it may perform its own inspection of the structural integrity and operating and mechanical systems of a facility, pipeline, tank vessel, or oil barge by using personnel with qualifications in the areas being inspected.
14	Pollution Control	Article 4, Section 480, pg 164	18 AAC 75.480. Inspections. (a) To verify compliance with the provisions of AS 46.04.030, AS 46.04.055, and 18 AAC 75.400 - 18 AAC 75.496, the department may conduct announced and unannounced inspections of a vessel, barge, pipeline, or other operation that is subject to the requirements of AS 46.04.030, AS 46.04.055, and 18 AAC 75.400 - 18 AAC 75.496. If practicable, an inspection under this section will be coordinated with other regulatory agencies. (b) Based on the results of an inspection made under this section, the department will, in its discretion, take appropriate action under 18 AAC 75.490.
15	Chapter 42.06 Pipeline Act	Section 42.06.440, pg 10	Sec. 42.06.440. Inspection of records. (a) Subject to AS 31.05.035(c), the commission shall at all reasonable times have access to, and may designate any of its employees, agents, or consultants to inspect and examine, the accounts, records, books, maps, inventories, appraisals, valuations, or other reports and documents, kept by an oil or gas pipeline carrier or its affiliated interests, or prepared or kept for it by others, which relate to any contract or transaction between them. The commission may require an oil or gas pipeline carrier or its affiliated interest to file with the commission copies of any or all of these accounts, records, books, maps, inventories, appraisals, valuations, or other reports and documents, or to maintain those materials at some convenient location in the state specified by order. .....(b) Subject to AS 31.05.035(c), when participating as a party under AS 42.04.070(c) or AS 44.23.020(e), the attorney general shall, at all reasonable times, have the right to reasonable access to, and may designate any of the attorney general's employees, agents, or consultants to inspect and examine, the accounts, records, books, maps, inventories, appraisals, valuations, or other reports and documents kept by an oil or gas pipeline carrier that are relevant to the issues presented in any adjudicatory matter before the commission in which the attorney general has appeared as a party under AS 42.04.070(c) or AS 44.23.020(e). This access is subject to reasonable notice to all parties with an opportunity to object before the commission. Included under this subsection is access to records or other documents under the custody or control of an affiliated interest of the pipeline carrier that relate to any contract or transaction between the public utility and the affiliated interest. ....

	AB	AC	AD
16	Chapter 42.06 Pipeline Act	Section 42.06.140(a) (2,6), pg 1	Sec. 42.06.140. General powers and duties. (a) The commission ... (2) may investigate upon complaint or its own motion, the rates, classifications, rules, regulations, prices, services, practices, and facilities of pipeline carriers, and the performance of obligations under and compliance with the terms of leases issued by the state; .... (6) shall during normal business hours have access to and may designate any of its employees, agents, or consultants to inspect and examine the accounts, financial and property records, books, maps, inventories, appraisals, valuations, and related reports kept by a pipeline carrier, or kept for it by others, that directly affect the interests of the state and directly relate to pipelines located in the state; .....
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23	Chapter 42.06 Pipeline Act	Section 42.06.300, pg 5	Sec. 42.06.300. Modification, suspension, or revocation of certificates. Upon complaint or upon its own motion the commission, after due notice and hearing and for good cause shown, may amend, modify, suspend, or revoke a certificate, in whole or in part. Good cause for amendment, modification, suspension, or revocation of a certificate shall be (1) the requirements of public convenience and necessity; (2) misrepresentation of a material fact in obtaining the certificate; (3) unauthorized discontinuance or abandonment of all or part of a service that is the subject of the certificate; (4) willful failure to comply with the provisions of this chapter, or the regulations or orders of the commission; or (5) willful failure to comply with a term, condition, or limitation of the certificate.
24	Chapter 42.06 Pipeline Act	Section 42.06.310, pg 5	Sec. 42.06.310. Standards of service and facilities. (a) Each oil or gas pipeline facility shall furnish and maintain adequate, efficient, and safe service and facilities. This service shall be reasonably continuous and without unreasonable interruption or delay. (b) If the commission, upon its own motion or upon complaint, after providing reasonable notice and opportunity for hearing, finds that the service or facilities of an oil or gas pipeline facility are unreasonable, unsafe, inadequate, insufficient, or unreasonably discriminatory, or otherwise in violation of this chapter, the commission shall prescribe by regulation or order, the reasonable, safe, adequate, sufficient service or facilities to be observed, furnished, enforced, or employed, including all repairs, changes, alterations, extensions, substitutions, or improvements in facilities that are reasonably necessary and proper for the safety, accommodation, and convenience of the public and the users. Regulations or orders issued under this subsection shall conform to accepted industry standards and practices.

	AB	AC	AD
25	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 490, pg 165	18 AAC 75.490. Failure to comply. (a) If a plan holder fails to comply with an approved oil discharge prevention and contingency plan or nontank vessel plan, demonstrates an inability to maintain continuous access to the quality or quantity of resources identified in the plan, fails to respond with those resources in the shortest possible time if a discharge occurs, or is in any other way subject to the terms of AS 46.04.030(f)(1) - (4) or AS 46.04.055, the department may (1) revoke the approval of the plan after notice and opportunity for hearing under (c) of this section; (2) suspend its approval of the plan after notice and opportunity for hearing under (c) of this section, stating the conditions under which the department will reinstate the approval and allow operations to resume; (3) order the plan holder to file an application to amend the plan within a specified time under 18 AAC 75.415; or (4) take other necessary action to correct the failure to comply. (b) If a plan holder fails to apply for an amendment as required under (a)(3) of this section, the department may revoke the approval of the plan after notice and opportunity for hearing under (c) of this section. (c) If the department issues a notice of intent to revoke an approval under this chapter, the plan holder may request an adjudicatory hearing under 18 AAC 15.195 – 18 AAC 15.340.
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	AB	AC	AD
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30	Title 46. Water, Air, Energy, and Environmental Conservation	Sec tion 46.04.030 (f), pg 53	(f) Upon request of a plan holder or on the department's own initiative, the department, after notice and opportunity for hearing, may modify its approval of a contingency plan if the department determines that a change has occurred in the operation of a facility or vessel necessitating an amended or supplemented plan, or the operator's discharge experience demonstrates a necessity for modification. The department, after notice and opportunity for hearing, may revoke its approval of a contingency plan if the department determines that (1) approval was obtained by fraud or misrepresentation; (2) the operator does not have access to the quality or quantity of resources identified in the plan; (3) a term or condition of approval or modification has been violated; or (4) the person is not in compliance with the contingency plan and the deficiency materially affects the plan holder's response capability.
31	Chapter 42.06 Pipeline Act	Section 42.06.140(a) (7), pg 1	Sec. 42.06.140. General powers and duties. (a) The commission.... (7) may initiate, intervene in, and appear personally or by counsel and offer evidence in and participate in, any proceedings involving a pipeline carrier and affecting the interests of the state, before any officer, department, Board, commission, or court of this state; ....
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	AE	AF	AG
2	**Australia**		
3	**Source**		**DIRECT QUOTE (Level 1)**
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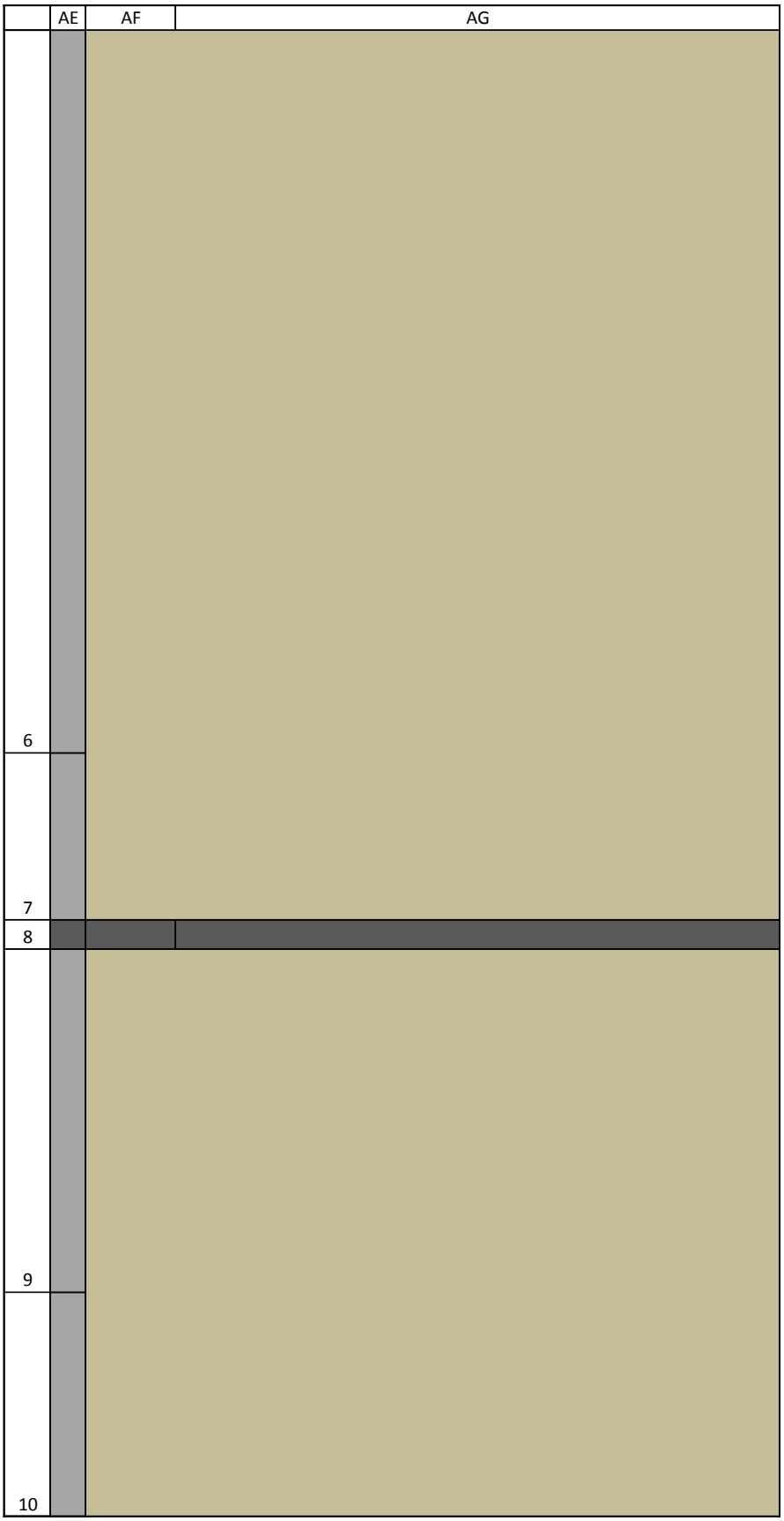
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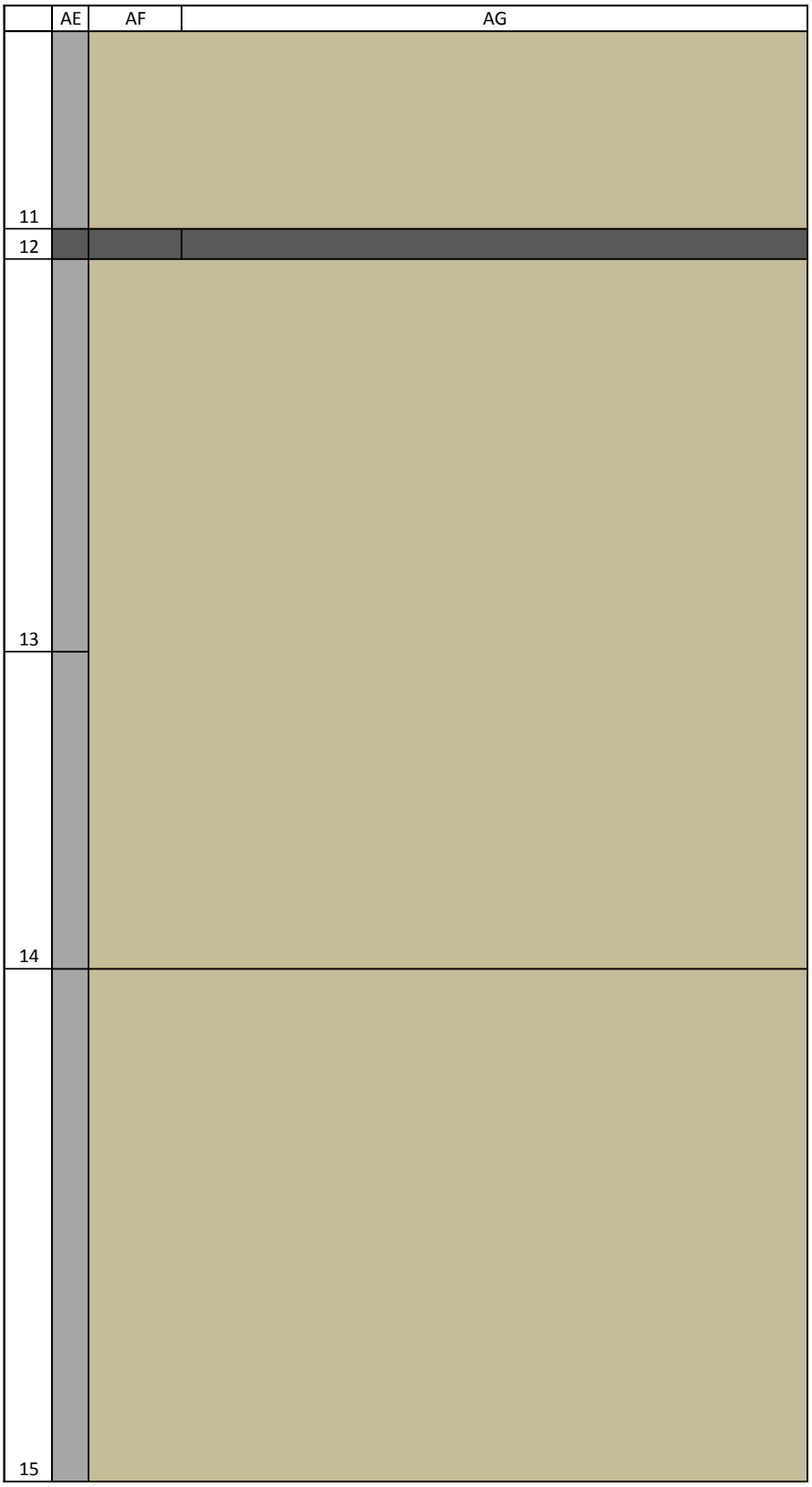
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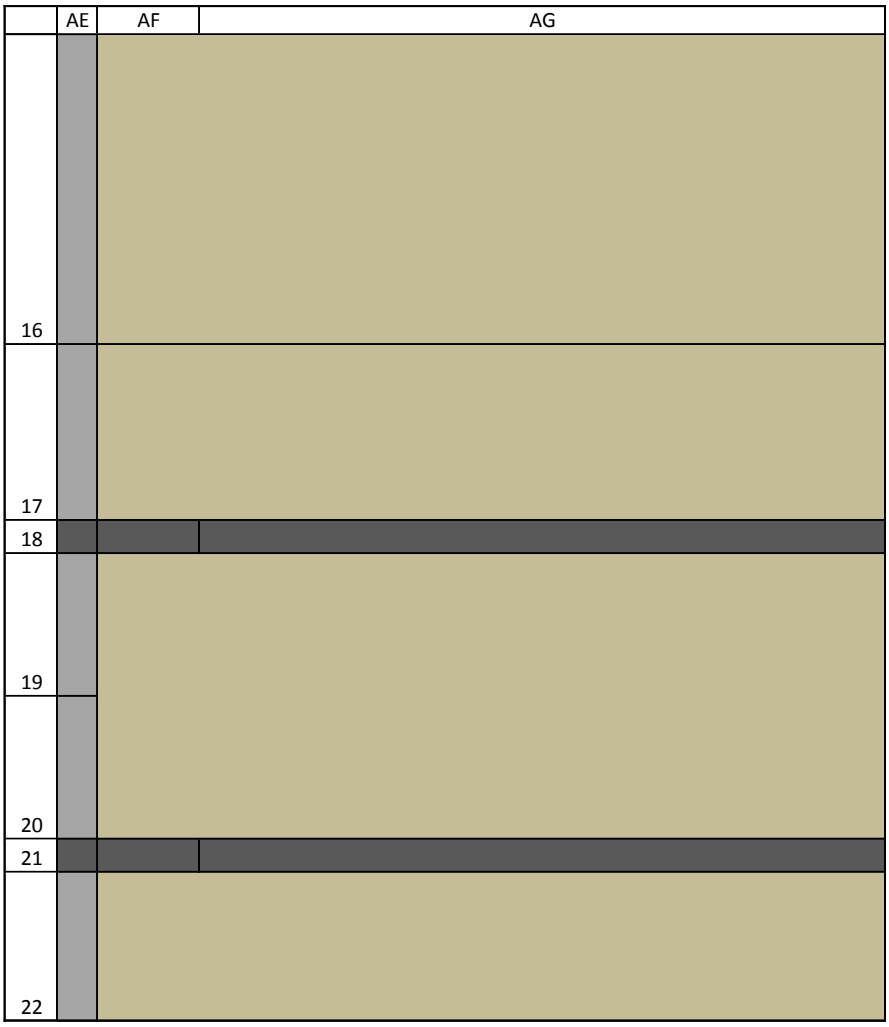
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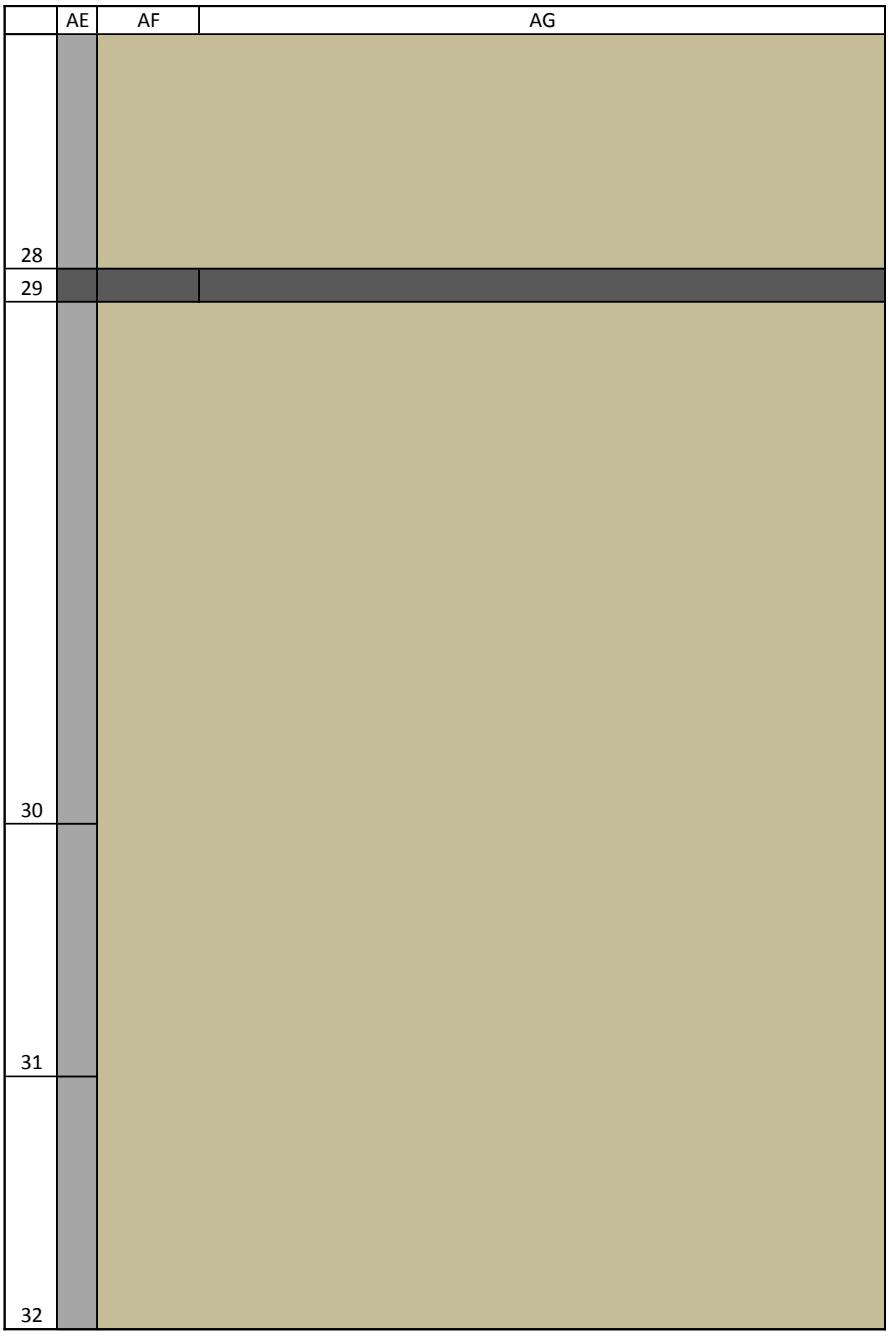
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2	**AB**			
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**
4	**NOTIFICATION / REPORTING OF INCIDENT**			
5	Pipeline Act	Part 6, Section 35 (1), pg 23	35(1) When a leak or break occurs in a pipeline, the licensee shall immediately cause the board to be informed of the location of the leak or break.	Licensee must immediately notify the ERCB of a leak or break and the location.
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9	Pipeline Act	Part 6, Section 35 (2(a),(b), pg 23	35(2) Where contact is made with a pipeline during any ground disturbance, resulting in a puncture of or crack in the pipeline or in a scratch, gouge, flattening or dent on the surface of the pipeline, or in damage to its protective coating, (a) .....the person responsible for the ground disturbance shall immediately advise the licensee of the pipeline of the location where the contact occurred and the kind of damage that resulted from the contact, and (b) the licensee of the pipeline shall immediately notify the Board of the location where the contact occurred and the kind of damage that resulted from the contact.	The licensee must be notified as to location and type of damage by the responsible party. The ERCB must be notified of the location and type of damage by the licensee.

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12	**REPAIR LEAK/DAMAGE/GROUND DISTURBANCE**			
13	Pipeline Regulation	Part 1, Section 7, pg 12	7(1) A licensee shall prepare and maintain a manual or manuals containing procedures for .... repair and shall on request file a copy of each manual with the Board for review. .... 7 (3) A licensee shall (a) update the manuals referred to in subsection (1) as necessary to ensure that their contents are correct, and (b) be able to demonstrate that the procedures contained in the manuals are being implemented.	
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15	Pipeline Act	Part 6, Section 35 (2)(a),(3), pg 23	35(2) Where contact is made with a pipeline during any ground disturbance, ... (a) the particular ground disturbance that resulted in the contact with the pipeline shall be immediately stopped .... (3) Where a particular ground disturbance has been stopped pursuant to subsection (2) it shall not be recommenced without the approval of the licensee of a pipeline with which contact was made or, if approval cannot be reasonably obtained from the licensee, without the approval of the Board.	If a ground disturbance occurs, work must be stopped immediately. Work cannot resume until the licensee, or alternatively the ERCB approves.
16	Pipeline Act	Part 7, Section 45, pg 27	45 If during construction or operation of a pipeline any damage occurs to any structure, another pipeline or to a private or public utility, the licensee shall immediately cause the damage to be repaired unless an arrangement has otherwise been made with the owner of that structure, pipeline or utility.	Any damage made to another pipeline or property must be repaired immediately.

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24	**INCIDENT INVESTIGATION, FINAL REPORT - PREVENTION**			
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28	Pipeline Act	Part 6, Section 35 (4), pg 23	35 (4) When a leak or break in a pipeline or damage to a pipeline that resulted from a contact described in subsection (2) has been repaired, the Board may require the submission of reports in writing, in accordance with the regulations.	After repair, the ERCB may require submission of reports.

	A	B	C	D
29	Pipeline Regulation	Part 8, Section 76, Pg 37	76 If a leak, break or contact damage has been reported to the Board in accordance with section 35 of the Act or section 27 of this Regulation, the licensee shall on request submit to the Board a written report indicating (a) the time the leak, break or contact damage occurred, ...(c) the method of repair, if applicable, (d) the conditions that caused or contributed to the leak, break or contact damage and any substantiating reports, (e) the steps to be taken to prevent similar occurrences in the future, ...(g) any other information that the Board may request.	The ERCB may request a written report indicating steps to be taken to prevent similar occurrences in the future.
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33	**GENERAL RECORDS, AND RECORDS OF INCIDENTS**			

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34	Pipeline Regulation	Part 4, Section 52, pg 27	52(1) A licensee shall maintain ….. (b) a record of all leaks, breaks and contact damage until the pipeline is removed. (2) The licensee shall submit a copy of the records referred to in subsection (1) to the Board on request.	A record of all leaks, breaks or contact damage must be maintained by the licensee for the pipeline's lifetime and must be submitted to the ERCB on request.
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38	Pipeline Regulation	Part 4, Section 52, pg 27	52(1) A licensee shall maintain (a) a record of data recorded by the operator and by the supervisory control and data acquisition system, including actions taken on field-investigated alarms, for a period of 3 months from the time of the observations, …	
39	Pipeline Regulation	Part 4, Section 47, pg 26	47 Unless otherwise authorized by the Board, a licensee shall maintain a record of all inspection and supervision required under this Part for a period of 2 years from the date the record is made and shall submit a copy of the record to the Board on request. (NOTE INCLUDES INSPECTION/SUPERVISION REQUIRED UNDER SECTION 43-57)	

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41	**PUBLIC AWARENESS**			
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	E	F	G	H	I
2	**BC**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5	Oil and Gas Activities Act	Section 37 (1)(b), (2)(d), pg 24	Spillage 37 (1) A permit holder and a person carrying out an oil and gas activity must ..... (b) promptly report to the commission any damage or malfunction likely to cause spillage that could be a risk to public safety or the environment. (2) If spillage occurs, a permit holder or person carrying out an oil and gas activity must promptly do all of the following: (d) if the spillage is a risk to public safety or the environment, report to the commission (i) the location and severity of the spillage, and (ii) any damage or malfunction causing or contributing to the spillage.	If it is a risk to public safety or the environment, a permit holder or person must promptly report to the commission any damage or malfunction likely to cause spillage. Where there is spillage, report the location, severity and cause of spillage.	BOTH Require immediate and prompt reporting of leaks. AB is HIGHER than BC in that it includes all leaks, line breaks and contact. BC (in the Act and regulations) only requires reporting when the leak, or damage is a risk to public safety or environment. AB is LOWER than BC in that BC reporting requirements are also for any damage or malfunction likely to cause spillage that could be a risk to public safety or the environment; whereas AB specifies report requirements only in the event of contact, leak or break. AB is HIGHER than BC in that where a person causes damage, the person must advise the licensee, who must immediately report to the Board; whereas BC only requires the person to report to the commission, and does not mention advising the permit holder.
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13					AB is HIGHER than BC in that it has a requirement for a repair manual.
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	E	F	G	H	I
15					AB is HIGHER than BC in that it requires work causing the contact to stop immediately and does not allow it to commence again without the licensee or Board approval. BC (in the act and regulations) does not specify.
16	Oil and Gas Activities Act	Section 37 (1)(a),(2)(a), (3), pg 24	Spillage 37 (1) A permit holder and a person carrying out an oil and gas activity must (a) prevent spillage, ... (2) If spillage occurs, a permit holder or person carrying out an oil and gas activity must promptly do all of the following: (a) remedy the cause or source of the spillage; .... (3) A person who is aware that spillage is occurring or likely to occur must make reasonable efforts to prevent or assist in containing or preventing the spillage.	The permit holder and a qualified person must promptly remedy the cause or source of the spillage. A person who is aware that spillage is occurring or likely to occur must make reasonable efforts to prevent or assist in containing or preventing the spillage.	AB is HIGHER than BC in that it requires all damage (not just leaks) to be immediately repaired by licensee; whereas BC requires a leak to be promptly repaired by the permit holder or person, but a likely spill requires a person to take "reasonable efforts" to prevent. A timeline is not provided, and there is no mention as to the responsibility of the permit holder.

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28	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 7, pg 4	7 (1) A pipeline permit holder must not operate a pipeline approved by the permit unless .....(b) the holder has prepared a damage prevention program for the purpose of anticipating and preventing damage to the permit holder's pipeline, (c) the pipeline is operated in accordance with ....the damage prevention program, ... (2) A pipeline permit holder, on the request of an official, must make available to the commission ..... a description of the damage prevention program required under subsection (1) (b).		AB is HIGHER than BC as BC does not mention (in the Act and regulations) any requirement for further reporting, beyond the initial report. AB is EQUAL to BC in that the program requirements for damage prevention that BC has are comparable to the reporting requirements AB has to include "steps to be taken to prevent similar occurrences in the future".

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34	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 12, pg 5	Reports 12 A pipeline permit holder and an LNG facility permit holder must maintain records of any spillage and any damage or malfunction likely to cause spillage that could be a risk to public safety or the environment.	The permit holder must maintain a record of any spillage, damage or malfunction likely to cause spillage if it could be a risk to public safety or the environment.	AB is HIGHER than BC in that it requires a record of all leaks, breaks or contact damage to be maintained; whereas BC only requires those that may be a risk to public safety or the environment be maintained.
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	E	F	G	H	I
36	Oil and Gas Activities Act	Section 38, pg 24	Records, reports and plans 38 (1) A permit holder must do all of the following: (a) prepare and maintain the prescribed records, reports and plans; ... c) prepare and maintain the records, reports and plans the commission orders the permit holder to maintain; (d) at the request of the commission, produce the records, reports and plans referred to in paragraph (a), (b) or (c) for inspection and copying; (e) at the request of the commission or as prescribed by regulation, submit to the commission, in the form and manner the commission requires, the records, reports and plans referred to in paragraph (a), (b) or (c).		AB is EQUAL to BC in that both are required to follow CSA.
37	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 13, pg 5	Record retention 13 A pipeline permit holder must comply with the record retention requirements set out in CSA Z662 and Annex N of CSA Z662 and an LNG facility permit holder must comply with the record retention requirements set out in CSA Z276.		

	E	F	G	H	I
38					AB is HIGHER than BC in that it provides lengths of time that records should be kept for.
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	E	F	G	H	I
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	J	K	L	M	N
2	**Saskatchewan**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
4					
5	The Pipelines Regulations	Section 20, Pg 8	Notification of fires, etc.20(1) Every operator shall immediately notify the department, by the most expeditious method, of the occurrence of any of the following: ... (b) the escape or release of more than 28,000 cubic metres of natural gas; (c) contact damage to a pipeline; (d) a break, leak, malfunction of any equipment or a worker error that results in the escape or release of: (i) oil, salt water, condensate or other product; (ii) natural gas within a road or railway right of way or within 150 metres of any dwelling; or (iii) natural gas containing hydrogen sulphide. ... (3) Notwithstanding subclause (1)(d)(i) but subject to subsection 21(3), an operator is not required to notify the department where the volume of oil, salt water, condensate or other product that escapes or is released is less than 1.6 cubic metres and is contained on property that the operator owns or leases.	An operator must immediately notify the department of a leak of more than 28,000 cubic metres of natural gas; OR, a break, leak, malfunction or worker error resulting in release of oil, salt water, condensate or other product (unless volume is less then 1.6 cubic metres, and contained an operator property); OR, natural gas within a road or railway right of way; OR, within 150 metres of any dwelling; OR, natural gas containing hydrogen sulphide.	AB is EQUAL to SK as both require immediate reporting of leaks. AB is HIGHER than SK in that it includes all leaks, line breaks and contact; whereas SK (in the Act and regulations) outlines specifically what leaks are to be reported immediately. All other leaks, line breaks and ruptures are reported every 6 months. AB is HIGHER than SK in that it requires reporting to the licensee who must immediately report to the Board; whereas SK only requires the operator to notify the department, and does not require a person to notify the operator.
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	J	K	L	M	N
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8		Section 21(3),(4), Pg 9	(3) Every six months an operator shall submit, for the previous six-month period, a written summary report to the department respecting every incident involving a pipeline rupture, break or leak for which the department was not required to be immediately notified pursuant to section 20. (4) The report mentioned in subsection (3) is to contain the following: (a) the date, time and location where the incident occurred; ... (d) a description of the cause of the incident.		
9	The Pipelines Regulations				

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13					AB is HIGHER than SK in that it has a requirement for a repair manual.
14					

	J	K	L	M	N
15					AB is HIGHER than SK in that it requires work causing the contact to stop immediately and does not allow it to commence again without licensee or Board approval. SK (in the Act and regulations) does not specify.
16	The Pipelines Regulations	Section 20, Pg 8	Notification of fires, etc. 20(2) Where an incident mentioned in subsection (1) occurs, the operator shall take immediate action in accordance with the emergency procedures manual. (NOTE: Section 14(a) of the Regulation indicates the manual should set out "the action to be taken and the agencies and persons to be contacted in the event of a rupture, break, leak or fire; ")	In the event of an incident as detailed in 20(1), the operator shall take immediate action following the Emergency Procedures Manual.	AB is HIGHER than SK in that it requires all damage to be immediately repaired by licensee. SK requires the Emergency Procedure manual be followed and the regulation does not indicate a timeline for repair that should be included in the manual.

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28	The Pipelines Regulations	Section 21(1),(2), Pg 9	Written reports 21(1) Every operator shall, within 30 days after notifying the department pursuant to section 20, submit a written report to the department containing: (a) the date and time and exact location where the incident occurred; (b) the action taken by the operating personnel, including details of any remedial clean-up steps taken, in progress or proposed; ... (f) a description of the cause of the incident, including any related technical report; (g) a description of the preventative action the operator intends to take to prevent a similar future occurrence.... (2) If a metallurgical report or other laboratory studies are required to determine the cause of a break, leak or malfunction of equipment, an additional period not exceeding six months may be granted by the minister for the submission of a final written report that addresses all items set out in subsection (1) as long as a preliminary written report is filed within 30 days after the department is notified of the incident.	Within 30 days a written report must be submitted to the department containing date and time, exact location, the action taken, cause including any related technical report, future preventative actions. If a metallurgical report or laboratory studies are required, an additional 6 months may be granted for a final written report as long as a preliminary written report is filed within 30 days.	AB is COMPARABLE to SK in that AB does not require a final report; but, may request one, where as SK requires submission within 30 days. Both require a report that includes specific information including how to prevent a similar incident in the future.

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34	The Pipelines Act	Part V, Section 25(1)(r), pg 12	25(1) The Lieutenant Governor in Council may make regulations:(r) requiring the keeping of records by licence holders or any other persons engaged in an activity governed by this Act or the regulations, and governing the form and content of those records;	Regulations MAY be made concerning the keeping of records.	SK does not have a regulation requiring records of incidents to be kept, only that record keeping can be regulated.
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	J	K	L	M	N
38					AB is HIGHER than SK in that it provides lengths of time that records should be kept.
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	O	P	Q	R	S
2	**CSA**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
4					
5	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.16, pg. 460	N.16 Incident investigations The operating company shall develop procedures for .... reporting failure and damage incidents. …		AB has requirements for reporting leaks, breaks and damage from a ground disturbance. This is in line with CSA requirements.
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13	System IMP	N.14, pg. 459	N.14 Mitigation and repair N.14.1 Operating companies should document the types of corrective actions that will be considered for conditions or imperfections that could cause a failure or damage incident with significant consequences. N.14.2 Operating companies shall document procedures for mitigation and repair.		AB has a requirement for a repair manual, which is EQUAL to the CSA requirement for documented mitigation/repair procedures.
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25	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.16, pg. 460	N.16 Incident investigations The operating company shall develop procedures for investigating ... failure and damage incidents. ....The procedures should include the following, as appropriate for the type of pipeline system: ....(b) an analysis to determine the need for changes to improve the effectiveness of the integrity management program.		
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28	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.11.2, pg. 456	N.11.2 Pipeline system integrity management program planning shall take the following into consideration, as appropriate for the type of pipeline system: (a) known conditions, damage, or imperfections (e.g., corrosion or manufacturing imperfections) that might lead to failure incidents; (b) the potential growth of any damage or imperfections; ..... (h) the failure and damage incident history of the operating company; (i) the failure and damage incident experience of the industry; and (j) the use of either direct or indirect inspection activities or a combination of both.		AB requires an incident report, which includes how similar incidents would be avoided in the future. This report is in line with CSA requirements. AB requires a determination of how to prevent similar future incidents in the incident report. This is in line with CSA requirements to look at options for reducing frequency and consequence of incidents.

	O	P	Q	R	S
29	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.10, pg 456	N.10 Options for reducing frequency and consequences of failure or damage incidents N.10.1 Operating errors The options that may be used to reduce the frequency of failure and damage incidents associated with improper operation or control system malfunction include the following, as applicable: (a) enhanced personnel training, employee evaluation, and worksite assessments; (b) improved pipeline system control and monitoring methods; (c) modified operating and maintenance practices; and (d) improvements or modifications to piping and equipment. ... 10.3 Imperfections The options that may be used to reduce the frequency of failure and damage incidents associated with imperfections (e.g., metal loss, cracking, and material, manufacturing, and construction defects) include the following, as applicable: .... (j) improved quality measures for ..... operation; and (k) assessment, repair, rehabilitation, and replacement programs. N.10.4 Natural hazards The options that may be used to reduce the frequency of failure and damage incidents associated with natural hazards include the following, as applicable: (e) excavation and reburial to relieve loads;		
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	O	P	Q	R	S
34	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.16, pg. 460	N.16 Incident investigations The operating company shall develop procedures for investigating .... failure and damage incidents. ... The procedures should include the following, as appropriate for the type of pipeline system: (a) the recording of incident information as specified in Clause H.2;		AB requires a record of all leaks, breaks and contact, this is in line with CSA requirements.
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	O	P	Q	R	S
36	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.5, pg 452	N.5 Integrity management program records N.5.1 Operating companies shall prepare and manage records related to pipeline system design, construction, operation, and maintenance that are needed for performing the activities included in the integrity management program. Items to be considered for inclusion in such records shall include the following, as appropriate for the type of pipeline system: (a) the location of the pipeline system with respect to crossings and land use and structures; (b) class location(s); (c) the design of the pipeline system or segments of the pipeline system, including limits on pressure, temperature, loading, and other operating conditions; (d) the standards and specifications for the pipe, components, bolting, and coating materials; (e) material test reports; (f) joining and inspection records; (g) coating and inspection records; (h) terrain, soil type, backfill material, and depth of cover; (i) pressure testing; (j) cathodic protection system design and performance; and (k) the methods used and the results obtained for the activities included in the integrity management program. N.5.2 The operating company shall document the methods used for managing the pipeline system integrity management program records. Items to be considered shall include (a) the responsibilities and procedures for the creation, updating, retention, and deletion of records; (b) methods of storage and retrieval of records related to a particular pipeline location or segment; (c) evidence of past activities, events, changes, analyses, and decisions; and (d) an index describing the types, forms, and locations of records.		
37	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.12, pg. 457	N.12 Inspections, testing, patrols, and monitoring .... N.12.7 Records of inspections, testing, patrols, and monitoring shall include (a) the dates when performed; (b) the methods and equipment used; (c) the results and observations; and (d) an evaluation of the acceptability of the results and observations.		

	O	P	Q	R	S
38	Onshore Pipeline Regulations				CSA does not set out requirements on data retention.
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42	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.10.5, pg 456	N.10.5 Consequence reduction The options that may be used to reduce the consequences associated with failure and damage incidents include the following, as applicable: .....(f) improved public awareness and education programs; ...		

	O	P	Q	R	S
43	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.10.2, pg 455	N.10.2 External interference The options that may be used to reduce the frequency of failure and damage incidents associated with external interference include the following, as applicable: ....(b) measures to improve public awareness of and education about the pipeline system;		

	T	U	V	W	X
2	**CANADA (NEB)**				
3		**Source**	**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
4					
5	Onshore Pipeline Regulations	Part 8, Section 52(1), Pg. 18	52. (1) A company shall immediately notify the Board of any incident relating to the construction, operation or abandonment of its pipeline ….	A company will immediately notify the Board of any incident.	AB is EQUAL to CAN as both require immediate reporting, and both include reporting of damage during ground disturbance. AB is LOWER than CAN, as CAN also requires reporting of hazards to the pipe during a ground disturbance, and details as to what the report should include.
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9	Onshore Pipeline Regulations, Part II SOR/88-529	Section 13, Pg 6	13. (1) The pipeline company shall immediately report to the Board ... (b) all damage to its pipe caused or observed during the construction or installation of a facility or during an excavation or during the operation, maintenance or removal of a facility; and (c) any activity of the facility owner or excavator that the pipeline company considers to be potentially hazardous to a pipe. (2) The report referred to in subsection (1) shall include (a) details of any contravention or of any damage, including, in the case of damage, the cause and nature thereof; (b) any concerns the pipeline company may have regarding the safety of the pipeline as a result of the construction or installation or of the excavation; and (c) any action the pipeline company intends to take or request.		

	T	U	V	W	X
10	Pipelines	Pg. 5, Step 1 & 2	Your Field Responsibilities Once the pipeline company has given its permission, there are four steps you must follow to comply with the regulations. 1. ..... Any contact with the pipe or its coating must be reported to the pipeline company immediately. Even incidents which seem minor at the time - small dents and scratches on the pipe or any damage to the coating - could lead to serious problems such as corrosion which could eventually cause the pipe to rupture.		
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12					
13					AB is EQUAL to CAN in that it has a requirement for a repair manual and CAN has requirements for Operation and Maintenance manuals, which will include information on repair.
14					

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15	National Energy Board Act	Part III, Section 48(1), pg 33	48. (1) To promote the safety and security of operation of a pipeline, the Board may order a company to repair, reconstruct .... part of the pipeline, and may direct that, until the work is done, that part of the pipeline not be used or be used in accordance with such terms and conditions as the Board may specify.		AB is HIGHER than CAN in that it requires the work causing contact to stop immediately and does not allow it to commence again without licensee or Board approval. CAN does not make specific requirements related to incidents; but, it can order a pipeline to be repaired or reconstructed, operation to stop and not resume until repair or reconstruction is complete under any terms and conditions they choose.
16					AB requires the licensee to immediately repair damage. CAN (in the Act and regulations) does not make that requirement.

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26	National Energy Board Act	Part III, Section 12(1.1), pg 10	12(1.1) The Board may inquire into any accident involving a pipeline ....the construction or operation of which is regulated by the Board and may, at the conclusion of the inquiry, make (a) findings as to the cause of the accident or factors contributing to it; (b) recommendations relating to the prevention of future similar accidents; or (c) any decision or order that the Board can make.		CAN allows for the Board to investigate any pipeline accident, make findings, recommendations, and decisions.

	T	U	V	W	X
27					
28	Onshore Pipeline Regulations	Part 8, Section 52(1),(2), Pg. 18	52. (1) A company shall .....submit a preliminary and detailed incident report to the Board as soon as is practicable. (2) After notification of an incident, an inspection officer may partially or completely relieve a company from the requirement to submit a preliminary and detailed incident report.	Submit a preliminary and detailed incident report to the Board as soon as is practicable. An inspection officer may partially or completely relieve a company from this requirement.	AB is LOWER than CAN in that it does not require a final report but may request one. CAN requires submission as soon as practicable and details what the report should include. CAN may however relieve the company of this requirement.

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	T	U	V	W	X
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	T	U	V	W	X
34	Onshore Pipeline Regulations	Part 10, Section 56(1),(2), Pg. 18	56. A company shall, in addition to complying with the record retention requirements set out in the CSA standards referred to in section 4, retain .... (g) for at least two years after the operation of a pipeline or part of one has been duly abandoned in accordance with all applicable requirements ... (vii) the documentation on all incidents reported under section 52.	Retain for at least two years after the operation of a pipeline (or abandoned pipeline) the documentation on all incidents reported under section 52.	AB is LOWER than CAN in that CAN requires all records related to incidents be kept for 2 years after abandonment; whereas AB requires retention until abandonment.
35	National Energy Board Pipeline Crossing Regulations, Part II SOR/88-529	Section 16, Pg 7	16. Every person required by these Regulations to keep records shall make the records, and all other materials necessary to verify the information therein, available to officers of the Board and other persons authorized by the Board for that purpose, and shall give the Board and other authorized persons every assistance necessary to inspect the records.	Pipeline Crossing Regulations require every person to keep and make records or other materials related to ground disturbance, and make available to the Board	

	T	U	V	W	X
36	Onshore Pipeline Regulations	Part 10, Section 55, Pg. 19	56. A company shall, in addition to complying with the record retention requirements set out in the CSA standards referred to in section 4, retain (a) until at least one month after the date on which they were recorded, the records made under paragraphs 36(c) and 37(b) except for leak detection data, which shall be retained for six months; (b) an annual report on the training program developed under section 46 that compares the actual training received by employees to the planned training;... (d) for the most recent five years of operation or for the period covered by the two most recent complete audits, whichever period is longer, the records for the audits and inspections required by sections 53 to 55; (e) for as long as the installations referred to in section 38 remain on the pipeline, detailed records of those installations, including (i) the location of the installation, (ii) the type of installation, (iii) the date of installation, (iv) the welding procedure used, (v) the carbon equivalent of the pipeline, (vi) the results of the non-destructive testing performed on the installation, and (vii) the planned date of removal of the installation; ....(g) for at least two years after the operation of a pipeline or part of one has been duly abandoned in accordance with all applicable requirements (i) all records available to the company in respect of the procedures used in each stage of the construction of the pipeline or part, (ii) the production reports and mill certificates, (iii) the specifications and name-plate data, if any, of the pumps, compressors, drivers, storage tanks and other major equipment of the pipeline, (iv) the performance curves of all main line pumps and compressors of the pipeline, (v) the reports of all surveillance and monitoring programs developed under section 39, (vi) the documentation referred to in section 41 in respect of pipeline defects, and (vii) the documentation on all incidents reported under section 52.		AB is LOWER than CAN in that CAN gives requirements in addition to CSA requirements, whereas AB follows CSA.
37					

	T	U	V	W	X
38	Onshore Pipeline Regulations	Part 6, Section 37, Pg. 13	37. A company shall develop and implement a pipeline control system that ... (b) records historical pipeline operation data, messages and alarms for recall;		AB is HIGHER than CAN in that while both require records to be kept, AB indicates how long they should be kept, whereas CAN (in the Act and regulations) does not indicate, except for in the case of incidents as outlined above.
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42	529	Section 4, Pg 2	4. (1) Every pipeline company shall establish an ongoing public awareness program to inform the public of (a) the presence of the pipeline; and (b) the public's responsibilities regarding any construction or installation of a facility and any excavation that might affect the pipeline. (2) Every pipeline company shall assess the effectiveness of its public awareness program on a regular basis and shall maintain a record of the assessment.		AB is LOWER to CAN as CAN requires an ongoing public awareness program. AB does not specifically require this program, but AB requires compliance with Annex N, and Annex N lists such a program as an "option" for reducing frequency and consequence of failure and damage.

	T	U	V	W	X
43					

	Y	Z	AA
2	**DOT**		
3	**Source**		**DIRECT QUOTE (Level 1)**
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5	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (h), Pg. 7	(h) Safety Condition Reports.— (1) The Secretary shall prescribe regulations requiring each operator of a pipeline facility (except a master meter) to submit to the Secretary a written report on any (A) condition that is a hazard to life, property, or the environment; and (B) safety-related condition that causes or has caused a significant change or restriction in the operation of a pipeline facility. (2) The Secretary must receive the report not later than 5 working days after a representative of a person to which this section applies first establishes that the condition exists. Notice of the condition shall be given concurrently to appropriate State authorities.
6	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart B, Section 195.55, pg 560	§195.55 Reporting safety-related conditions. (a) Except as provided in paragraph (b) of this section, each operator shall report in accordance with §195.56 the existence of any of the following safety-related conditions involving pipelines in service: (1) General corrosion that has reduced the wall thickness to less than that required for the maximum operating pressure, and localized corrosion pitting to a degree where leakage might result. (2) Unintended movement or abnormal loading of a pipeline by environmental causes, such as an earthquake, landslide, or flood, that impairs its serviceability. (3) Any material defect or physical damage that impairs the serviceability of a pipeline. (4) Any malfunction or operating error that causes the pressure of a pipeline to rise above 110 percent of its maximum operating pressure. (5) A leak in a pipeline that constitutes an emergency. (6) Any safety-related condition that could lead to an imminent hazard and causes (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent or more reduction in operating pressure or shutdown of operation of a pipeline. (b) A report is not required for any safety-related condition that— (1) Exists on a pipeline that is more than 220 yards (200 meters) from any building intended for human occupancy or outdoor place of assembly, except that reports are required for conditions within the right-of-way of an active railroad, paved road, street, or highway, or that occur offshore or at onshore locations where a loss of hazardous liquid could reasonably be expected to pollute any stream, river, lake, reservoir, or other body of water; (2) Is an accident that is required to be reported under §195.50 or results in such an accident before the deadline for filing the safety-related condition report; or (3) Is corrected by repair or replacement in accordance with applicable safety standards before the deadline for filing the safety-related condition report, except that reports are required for all conditions under paragraph (a)(1) of this section other than localized corrosion pitting on an effectively coated and cathodically protected pipeline

	Y	Z	AA
7	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart B, Section 195.56, pg 560	§195.56 Filing safety-related condition reports. (a) Each report of a safety-related condition under §195.55(a) must be filed (received by the Administrator) in writing within 5 working days (not including Saturdays, Sundays, or Federal holidays) after the day a representative of the operator first determines that the condition exists, but not later than 10 working days after the day a representative of the operator discovers the condition. Separate conditions may be described in a single report if they are closely related. To file a report by facsimile (fax), dial (202) 366–7128. (b) The report must be headed ''Safety-Related Condition Report'' and provide the following information: (1) Name and principal address of operator. (2) Date of report. (3) Name, job title, and business telephone number of person submitting the report. (4) Name, job title, and business telephone number of person who determined that the condition exists. (5) Date condition was discovered and date condition was first determined to exist. (6) Location of condition, with reference to the State (and town, city, or county) or offshore site, and as appropriate nearest street address, offshore platform, survey station number, milepost, landmark, or name of pipeline. (7) Description of the condition, including circumstances leading to its discovery, any significant effects of the condition on safety, and the name of the commodity transported or stored. (8) The corrective action taken (including reduction of pressure or shutdown) before the report is submitted and the planned follow-up or future corrective action, including the anticipated schedule for starting and concluding such action.
8	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart B, Section 195.49, pg 558	Subpart B—Annual, Accident, and Safety-Related Condition Re- porting.....195.49 Annual report. Each operator must annually com- plete and submit DOT Form PHMSA F 7000–1.1 for each type of hazardous liq- uid pipeline facility operated at the end of the previous year. An operator must submit the annual report by June 15 each year, except that for the 2010 reporting year the report must be sub- mitted by August 15, 2011. A separate report is required for crude oil, HVL (including anhydrous ammonia), petro- leum products, carbon dioxide pipe- lines, and fuel grade ethanol pipelines. For each state a pipeline traverses, an operator must separately complete those sections on the form requiring information to be reported for each state.....
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11	Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.605 (b)(4), pg 454	192.605 (b) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following, if applicable, to provide safety during maintenance and operations. .... (4) Gathering of data needed for reporting incidents under Part 191 of this chapter in a timely and effective manner. ...
12			
13	Title 49 - US Code - Chapter 601 - Safety	Section 60103 (f), Pg. 9	(f) Contingency Plans.— A new liquefied natural gas pipeline facility may be operated only after the operator submits an adequate contingency plan that states the action to be taken if a liquefied natural gas accident occurs. The Secretary of Energy or appropriate State or local authority shall decide if the plan is adequate.
14	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.422, pg 583	195.422 Pipeline repairs. (a) Each operator shall, in repairing its pipeline systems, insure that the repairs are made in a safe manner and are made so as to prevent damage to persons or property. (b) No operator may use any pipe, valve, or fitting, for replacement in repairing pipeline facilities, unless it is designed and constructed as required by this part.

	Y	Z	AA
15			
16	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.711, pg 471	192.711 Transmission lines: General requirements for repair procedures. (a) Temporary repairs. Each operator must take immediate temporary measures to protect the public whenever: (1) A leak, imperfection, or damage that impairs its serviceability is found in a segment of steel transmission line operating at or above 40 percent of the SMYS; and (2) It is not feasible to make a permanent repair at the time of discovery. (b) Permanent repairs. An operator must make permanent repairs on its pipeline system according to the following: (1) Non integrity management repairs: The operator must make permanent repairs as soon as feasible. (2) Integrity management repairs: When an operator discovers a condition on a pipeline covered under Subpart O– Gas Transmission Pipeline Integrity Management, the operator must remediate the condition as prescribed by § 192.933(d). (c) Welded patch. Except as provided in § 192.717(b)(3), no operator may use a welded patch as a means of repair.

	Y	Z	AA
17	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.933, pg 490	192.933 What actions must be taken to address integrity issues? (a) General requirements. An operator must take prompt action to address all anomalous conditions the operator discovers through the integrity assessment. In addressing all conditions, an operator must evaluate all anomalous conditions and remediate those that could reduce a pipeline's integrity. An operator must be able to demonstrate that the remediation of the condition will ensure the condition is unlikely to pose a threat to the integrity of the pipeline until the next reassessment of the covered segment. (1) Temporary pressure reduction. ..... (2) Long-term pressure reduction. When a pressure reduction exceeds 365 days, the operator must notify PHMSA under § 192.949 and explain the reasons for the remediation delay. This notice must include a technical justification that the continued pressure reduction will not jeopardize the integrity of the pipeline. The operator also must notify a State pipeline safety authority when either a covered segment is located in a State where PHMSA has an interstate agent agreement, or an intrastate covered segment is regulated by that State. (b) Discovery of condition. Discovery of a condition occurs when an operator has adequate information about a condition to determine that the condition presents a potential threat to the integrity of the pipeline. A condition that presents a potential threat includes, but is not limited to, those conditions that require remediation or monitoring listed under paragraphs (d)(1) through (d)(3) of this section. An operator must promptly, but no later than 180 days after conducting an integrity assessment, obtain sufficient information about a condition to make that determination, unless the operator demonstrates that the 180-day period is impracticable. (c) Schedule for evaluation and remediation. An operator must complete remediation of a condition according to a schedule prioritizing the conditions for evaluation and remediation. Unless a special requirement for remediating certain conditions applies, as provided in paragraph (d) of this section, an operator must follow the schedule in ASME/ANSI B31.8S (incorporated by reference, see § 192.7), section 7, Figure 4..... (d) Special requirements for scheduling remediation—(1) Immediate repair conditions. An operator's evaluation and remediation schedule must follow ASME/ ANSI B31.8S, section 7 in providing for immediate repair conditions. To maintain safety, an operator must temporarily reduce operating pressure in accordance with paragraph (a) of this section or shut down the pipeline until the operator completes the repair of these conditions. An operator must treat the following conditions as immediate repair conditions: (i) A calculation of the remaining strength of the pipe shows a predicted failure pressure less than or equal to 1.1 times the maximum allowable operating pressure at the location of the anomaly. .... (ii) A dent that has any indication of metal loss, cracking or a stress riser. (iii) An indication or anomaly that in the judgment of the person designated by the operator to evaluate the assessment results requires immediate action. (2) One-year conditions. Except for conditions listed in paragraph (d)(1) and (d)(3) of this section, an operator must remediate any of the following within one year of discovery of the condition: (i) A smooth dent located between the 8 o'clock and 4 o'clock positions (upper 2⁄3 of the pipe) with a depth greater than 6% of the pipeline diameter (greater than 0.50 inches in depth for a pipeline diameter less than Nominal Pipe Size (NPS) 12). (ii) A dent with a depth greater than 2% of the pipeline's diameter (0.250 inches in depth for a pipeline diameter less than NPS 12) that affects pipe curvature at a girth weld or at a longitudinal seam weld. (3) Monitored conditions. An operator does not have to schedule the following conditions for remediation, but must record and monitor the conditions during subsequent risk assessments and integrity assessments for any change that may require remediation: (i) A dent with a depth greater than 6% of the pipeline diameter (greater than 0.50 inches in depth for a pipeline diameter less than NPS 12) located between the 4 o'clock position and the 8 o'clock position (bottom 1⁄3 of the pipe). (ii) A dent located between the 8 o'clock and 4 o'clock positions (upper 2⁄3 of the pipe) with a depth greater than 6% of the pipeline diameter (greater than 0.50 inches in depth for a pipeline diameter less than Nominal Pipe Size (NPS) 12), and engineering analyses of the dent demonstrate critical strain levels are not exceeded. (iii) A dent with a depth greater than 2% of the pipeline's diameter (0.250 inches in depth for a pipeline diameter less than NPS 12) that affects pipe curvature at a girth weld or a longitudinal seam weld, and engineering analyses of the dent and girth or seam weld demonstrate critical strain levels are not exceeded. These analyses must consider weld properties.
18	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.947(f), pg 497	192.947 What records must an operator keep? An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At minimum, an operator must maintain the following records for review during an inspection. .... (f) Schedule required by § 192.933 that prioritizes the conditions found during an assessment for evaluation and remediation, including technical justifications for the schedule....

	Y	Z	AA
19	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.401(b), pg 577	Subpart F—Operation and Maintenance § 195.401 General requirements .... (b) An operator must make repairs on its pipeline system according to the following requirements: (1) Non Integrity management repairs. Whenever an operator discovers any condition that could adversely affect the safe operation of its pipeline system, it must correct the condition within a reasonable time. However, if the condition is of such a nature that it presents an immediate hazard to persons or property, the operator may not operate the affected part of the system until it has corrected the unsafe condition. (2) Integrity management repairs. When an operator discovers a condition on a pipeline covered under § 195.452, the operator must correct the condition as prescribed in § 195.452(h). (c) Except as provided in § 195.5, no operator may operate any part of any of the following pipelines unless it was designed and constructed as required by this part: (1) An interstate pipeline, other than a low-stress pipeline, on which construction was begun after March 31, 1970, that transports hazardous liquid. (2) An interstate offshore gathering line, other than a low-stress pipeline, on which construction was begun after July 31, 1977, that transports hazardous liquid. (3) An intrastate pipeline, other than a low-stress pipeline, on which construction was begun after October 20, 1985, that transports hazardous liquid. (4) A pipeline on which construction was begun after July 11, 1991, that transports carbon dioxide. (5) A low-stress pipeline on which construction was begun after August 10, 1994.
20	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.713, pg 471	192.713 Transmission lines: Permanent field repair of imperfections and damages. (a) Each imperfection or damage that impairs the serviceability of pipe in a steel transmission line operating at or above 40 percent of SMYS must be— (1) Removed by cutting out and replacing a cylindrical piece of pipe; or (2) Repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe. (b) Operating pressure must be at a safe level during repair operations.
21	and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.715, pg 472	192.715 Transmission lines: Permanent field repair of welds. Each weld that is unacceptable under § 192.241(c) must be repaired as follows: (a) If it is feasible to take the segment of transmission line out of service, the weld must be repaired in accordance with the applicable requirements of § 192.245. (b) A weld may be repaired in accordance with § 192.245 while the segment of transmission line is in service if: (1) The weld is not leaking; (2) The pressure in the segment is reduced so that it does not produce a stress that is more than 20 percent of the SMYS of the pipe; and (3) Grinding of the defective area can be limited so that at least 1⁄8-inch (3.2 millimeters) thickness in the pipe weld remains. (c) A defective weld which cannot be repaired in accordance with paragraph (a) or (b) of this section must be repaired by installing a full encirclement welded split sleeve of appropriate design.
22	and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.717, pg 472	192.717 Transmission lines: Permanent field repair of leaks. Each permanent field repair of a leak on a transmission line must be made by— (a) Removing the leak by cutting out and replacing a cylindrical piece of pipe; or (b) Repairing the leak by one of the following methods: (1) Install a full encirclement welded split sleeve of appropriate design, unless the transmission line is joined by mechanical couplings and operates at less than 40 percent of SMYS. (2) If the leak is due to a corrosion pit, install a properly designed bolt-onleak clamp. (3) If the leak is due to a corrosion pit and on pipe of not more than 40,000 psi (267 Mpa) SMYS, fillet weld over the pitted area a steel plate patch with rounded corners, of the same or greater thickness than the pipe, and not more than one-half of the diameter of the pipe in size. (4) If the leak is on a submerged offshore pipeline or submerged pipeline in inland navigable waters, mechanically apply a full encirclement split sleeve of appropriate design. (5) Apply a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe.

	Y	Z	AA
23	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.719, pg 472	192.719 Transmission lines: Testing of repairs. (a) Testing of replacement pipe. If a segment of transmission line is repaired by cutting out the damaged portion of the pipe as a cylinder, the replacement pipe must be tested to the pressure required for a new line installed in the same location. This test may be made on the pipe before it is installed. (b) Testing of repairs made by welding. Each repair made by welding in accordance with §§ 192.713, 192.715, and 192.717 must be examined in accordance with § 192.241.
24			
25	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.617, pg 460	192.617 Investigation of failures. Each operator shall establish procedures for analyzing accidents and failures, including the selection of samples of the failed facility or equipment for laboratory examination, where appropriate, for the purpose of determining the causes of the failure and minimizing the possibility of a recurrence.
26	Title 49 - US Code - Chapter 601 - Safety	Section 60118 (e), Pg. 30	(e) Operator Assistance in Investigations.— If the Secretary or the National Transportation Safety Board investigate[1] an accident involving a pipeline facility, the operator of the facility shall make available to the Secretary or the Board all records and information that in any way pertain to the accident (including integrity management plans and test results), and shall afford all reasonable assistance in the investigation of the accident.

	Y	Z	AA
27	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart B, Section 195.60, pg 562	§195.60 Operator assistance in investigation. If the Department of Transportation investigates an accident, the operator involved shall make available to the representative of the Department all records and information that in any way pertain to the accident, and shall afford all reasonable assistance in the investigation of the accident.
28		Section 60134 (a,b), Pg. 46	(a) In General.— The Secretary may make a grant to a State authority (including a municipality with respect to intrastate gas pipeline transportation) to assist in improving the overall quality and effectiveness of a damage prevention program of the State authority under subsection (e) if the State authority (b) Damage Prevention Program Elements.— An effective damage prevention program includes the following elements: (1) Participation by operators, excavators, and other stakeholders in the development and implementation of methods for establishing and maintaining effective communications between stakeholders from receipt of an excavation notification until successful completion of the excavation, as appropriate. (2) A process for fostering and ensuring the support and partnership of stakeholders, including excavators, operators, locators, designers, and local government in all phases of the program. (3) A process for reviewing the adequacy of a pipeline operators internal performance measures regarding persons performing locating services and quality assurance programs. (4) Participation by operators, excavators, and other stakeholders in the development and implementation of effective employee training programs to ensure that operators, the one-call center, the enforcing agency, and the excavators have partnered to design and implement training for the employees of operators, excavators, and locators. (5) A process for fostering and ensuring active participation by all stakeholders in public education for damage prevention activities. (6) A process for resolving disputes that defines the State authoritys role as a partner and facilitator to resolve issues. (7) Enforcement of State damage prevention laws and regulations for all aspects of the damage prevention process, including public education, and the use of civil penalties for violations assessable by the appropriate State authority. (8) A process for fostering and promoting the use, by all appropriate stakeholders, of improving technologies that may enhance communications, underground pipeline locating capability, and gathering and analyzing information about the accuracy and effectiveness of locating programs. (9) A process for review and analysis of the effectiveness of each program element, including a means for implementing improvements identified by such program reviews.

	Y	Z	AA
29	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (c), Pg. 5	(c) Public Safety Program Requirements.— ... (3) The Secretary may include in the standards prescribed under subsection (a) of this section a requirement that an operator of a hazardous liquid pipeline facility participate in a public safety program meeting the requirements of paragraph (1) of this subsection or maintain and carry out a damage prevention program that provides services comparable to services that would be available under a public safety program.
30	Title 49 - US Code - Chapter 601 - Safety	Subpart L, 192.614, pg 458	192.614 Damage prevention program. (a) Except as provided in paragraphs (d) and (e) of this section, each operator of a buried pipeline must carry out, in accordance with this section, a written program to prevent damage to that pipeline from excavation activities. For the purposes of this section, the term ''excavation activities'' includes excavation, blasting, boring, tunneling, backfilling, the removal of aboveground structures by either explosive or mechanical means, and other earthmoving operations. (b) An operator may comply with any of the requirements of paragraph (c) of this section through participation in a public service program, such as a onecall system, but such participation does not relieve the operator of responsibility for compliance with this section. However, an operator must perform the duties of paragraph (c)(3) of this section through participation in a one-call system, if that one-call system is a qualified one-call system. In areas that are covered by more than one qualified one-call system, an operator need only join one of the qualified onecall systems if there is a central telephone number for excavators to call for excavation activities, or if the one-call systems in those areas communicate with one another. An operator's pipeline system must be covered by a qualified one-call system where there is one in place. For the purpose of this section, a one-call system is considered a ''qualified one-call system'' if it meets the requirements of section (b)(1) or (b)(2) of this section. (1) The state has adopted a one-call damage prevention program under § 198.37 of this chapter; or (2) The one-call system: (i) Is operated in accordance with § 198.39 of this chapter; (ii) Provides a pipeline operator an opportunity similar to a voluntary participant to have a part in management responsibilities; and (iii) Assesses a participating pipeline operator a fee that is proportionate to the costs of the one-call system's coverage of the operator's pipeline. (c) The damage prevention program required by paragraph (a) of this section must, at a minimum: (1) Include the identity, on a current basis, of persons who normally engage in excavation activities in the area in which the pipeline is located. (2) Provides for notification of the public in the vicinity of the pipeline and actual notification of the persons identified in paragraph (c)(1) of this section of the following as often as needed to make them aware of the damage prevention program: (i) The program's existence and purpose; and (ii) How to learn the location of underground pipelines before excavation activities are begun. (3) Provide a means of receiving and recording notification of planned excavation activities. (4) If the operator has buried pipelines in the area of excavation activity, provide for actual notification of persons who give notice of their intent to excavate of the type of temporary marking to be provided and how to identify the markings. (5) Provide for temporary marking of buried pipelines in the area of excavation activity before, as far as practical, the activity begins. (6) Provide as follows for inspection of pipelines that an operator has reason to believe could be damaged by excavation activities: VerDate Mar<15>2010 14:56 Jan 03, 2012 Jkt 223216 PO 00000 Frm 00470 Fmt 8010 Sfmt 8010 Y:\SGML\223216.XXX 223216 wreier-aviles on DSK3TPTVN1PROD with CFR 459 Pipeline and Hazardous Materials Safety Admin., DOT § 192.615 (i) The inspection must be done as frequently as necessary during and after the activities to verify the integrity of the pipeline; and (ii) In the case of blasting, any inspection must include leakage surveys. (d) A damage prevention program under this section is not required for the following pipelines: (1) Pipelines located offshore. (2) Pipelines, other than those located offshore, in Class 1 or 2 locations until September 20, 1995. (3) Pipelines to which access is physically controlled by the operator. (e) Pipelines operated by persons other than municipalities (including operators of master meters) whose primary activity does not include the transportation of gas need not comply with the following: (1) The requirement of paragraph (a) of this section that the damage prevention program be written; and (2) The requirements of paragraphs (c)(1) and (c)(2) of this section.

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31	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart F, Section 195.442 a,b, pg 585	195.442 Damage prevention program. (a) Except as provided in paragraph (d) of this section, each operator of a buried pipeline must carry out, in accordance with this section, a written program to prevent damage to that pipeline from excavation activities. For the purpose of this section, the term ''excavation activities'' includes excavation, blasting, boring, tunneling, backfilling, the removal of aboveground structures by either explosive or mechanical means, and other earthmoving operations. (b) An operator may comply with any of the requirements of paragraph (c) of this section through participation in a public service program, such as a onecall system, but such participation does not relieve the operator of the responsibility for compliance with this section. However, an operator must perform the duties of paragraph (c)(3) of this section through participation in a one-call system, if that one-call system is a qualified one-call system. In areas that are covered by more than one qualified one-call system, an operator need only join one of the qualified one-call systems if there is a central telephone number for excavators to call for excavation activities, or if the one-call systems in those areas communicate with one another. An operator's pipeline system must be covered by a qualified one-call system where there is one in place. For the purpose of this section, a one-call system is considered a ''qualified one-call system'' if it meets the requirements of section (b)(1) or (b)(2) or this section. (1) The state has adopted a one-call damage prevention program under § 198.37 of this chapter; or (2) The one-call system: (i) Is operated in accordance with § 198.39 of this chapter; (ii) Provides a pipeline operator an opportunity similar to a voluntary participant to have a part in management responsibilities; and (iii) Assesses a participating pipeline operator a fee that is proportionate to the costs of the one-call system's coverage of the operator's pipeline.
32	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.442 c, pg 586	(c) The damage prevention program required by paragraph (a) of this section must, at a minimum: (1) Include the identity, on a current basis, of persons who normally engage in excavation activities in the area in which the pipeline is located. (2) Provides for notification of the public in the vicinity of the pipeline and actual notification of persons identified in paragraph (c)(1) of this section of the following as often as needed to make them aware of the damage prevention program: (i) The program's existence and purpose; and (ii) How to learn the location of underground pipelines before excavation activities are begun. (3) Provide a means of receiving and recording notification of planned excavation activities. (4) If the operator has buried pipelines in the area of excavation activity, provide for actual notification of persons who give notice of their intent to excavate of the type of temporary marking to be provided and how to identify the markings. (5) Provide for temporary marking of buried pipelines in the area of excavation activity before, as far as practical, the activity begins. (6) Provide as follows for inspection of pipelines that an operator has reason to believe could be damaged by excavation activities: (i) The inspection must be done as frequently as necessary during and after the activities to verify the integrity of the pipeline; and (ii) In the case of blasting, any inspection must include leakage surveys. (d) A damage prevention program under this section is not required for the following pipelines: (1) Pipelines located offshore. (2) Pipelines to which access is physically controlled by the operator.
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34	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (e), Pg. 6	e) Pipe Inventory Standards.— The Secretary shall prescribe minimum standards requiring an operator of a pipeline facility subject to this chapter to maintain for the Secretary, to the extent practicable, an inventory with appropriate information about the types of pipe used for the transportation of gas or hazardous liquid, as appropriate, in the operators system and additional information, including the materials history and the leak history of the pipe. ...
35	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.709, pg 471	192.709 Transmission lines: Record keeping. Each operator shall maintain the following records for transmission lines for the periods specified: (a) The date, location, and description of each repair made to pipe (including pipe-to-pipe connections) must be retained for as long as the pipe remains in service. (b) The date, location, and description of each repair made to parts of the pipeline system other than pipe must be retained for at least 5 years. However, repairs generated by patrols, surveys, inspections, or tests required by subparts L and M of this part must be retained in accordance with paragraph (c) of this section. (c) A record of each patrol, survey, inspection, and test required by subparts L and M of this part must be retained for at least 5 years or until the next patrol, survey, inspection, or test is completed, whichever is longer.

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38	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (d), Pg. 6	(d) Facility Operation Information Standards.— The Secretary shall prescribe minimum standards requiring an operator of a pipeline facility subject to this chapter to maintain, to the extent practicable, information related to operating the facility as required by the standards prescribed under this chapter and, when requested, to make the information available to the Secretary and an appropriate State official as determined by the Secretary. The information shall include ....(3) a description of (A) the characteristics of the operators pipelines in the State; and (B) products transported through the operators pipelines in the State; (4) the manual that governs operating and maintaining pipeline facilities in the State; (5) an emergency response plan describing the operators procedures for responding to and containing releases, ...(6) other information the Secretary considers useful to inform a State of the presence of pipeline facilities and operations in the State. e) Pipe Inventory Standards.— The Secretary shall prescribe minimum standards requiring an operator of a pipeline facility subject to this chapter to maintain for the Secretary, to the extent practicable, an inventory with appropriate information about the types of pipe used for the transportation of gas or hazardous liquid, as appropriate, in the operators system and additional information, including the materials history and the leak history of the pipe. ...
39	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.947(i), pg 497	192.947 What records must an operator keep? An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At minimum, an operator must maintain the following records for review during an inspection. ....(i) Verification that an operator has provided any documentation or notification required by this subpart to be provided to OPS, and when applicable, a State authority with which OPS has an interstate agent agreement, and a State or local pipeline safety authority that regulates a covered pipeline segment within that State.

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40	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 l, pg 595	195.452 Pipeline integrity management in high consequence areas. ... (l) What records must be kept? (1) An operator must maintain for review during an inspection: (i) A written integrity management program in accordance with paragraph (b) of this section. (ii) Documents to support the decisions and analyses, including any modifications, justifications, variances, deviations and determinations made, and actions taken, to implement and evaluate each element of the integrity management program listed in paragraph (f) of this section. (2) See Appendix C of this part for examples of records an operator would be required to keep. ....
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42	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (c), Pg. 5	(c) Public Safety Program Requirements.— (1) The Secretary shall include in the standards prescribed under subsection (a) of this section a requirement that an operator of a gas pipeline facility participate in a public safety program that (A) notifies an operator of proposed demolition, excavation, tunneling, or construction near or affecting the facility; (B) requires an operator to identify a pipeline facility that may be affected by the proposed demolition, excavation, tunneling, or construction, to prevent damaging the facility; and (C) the Secretary decides will protect a facility adequately against a hazard caused by demolition, excavation, tunneling, or construction. ... (3) The Secretary may include in the standards prescribed under subsection (a) of this section a requirement that an operator of a hazardous liquid pipeline facility participate in a public safety program meeting the requirements of paragraph (1) of this subsection or maintain and carry out a damage prevention program that provides services comparable to services that would be available under a public safety program.

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43	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (c), Pg. 5	(B) (i) Not later than June 1, 1998, the Secretary shall survey and assess the public education programs under section 60116 and the public safety programs under section 60102 (c) and determine their effectiveness and applicability as components of a model program. In particular, the survey shall include the methods by which operators notify residents of the location of the facility and its right of way, public information regarding existing One-Call programs, and appropriate procedures to be followed by residents of affected municipalities in the event of accidents involving interstate gas pipeline facilities.

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5	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 3, Section 300, pg 50	18 AAC 75.300. Discharge or release notification; reporting requirements. (a) Subject to (b), (c), and (g) of this section, a person in charge of a facility or operation shall notify the department by telephone, and immediately afterwards send the department a written notice by facsimile, hand delivery, or first class mail, informing the department about a discharge or release of a hazardous substance at or from the facility or operation as follows: (1) as soon as the person has knowledge of a (A) discharge or release of a hazardous substance other than oil; (B) discharge or release of oil to water; or (C) discharge or release, including a cumulative discharge or release, of oil in excess of 55 gallons solely to land outside an impermeable secondary containment area or structure; and (2) within 48 hours after the person has knowledge of a discharge or release, including a cumulative discharge, of oil solely to land (A) in excess of 10 gallons, but 55 gallons or less; or (B) in excess of 55 gallons, if the discharge or release is the result of the escape or release of oil from its original storage tank, pipeline, or other immediate container into an impermeable secondary containment area or structure. ... (f) A report, record, or notification required by this section must contain, as applicable, (1) the date and time of the discharge or release; (2) the location of the discharge or release; (3) the name of the facility or operation; (4) the name, mailing address, and telephone number of (A) each responsible person; and (B) the owner and the operator of the facility or operation; (5) the type and amount of each hazardous substance discharged or released; (6) factors that caused or contributed to the discharge or release; (7) a description of any environmental effects of the discharge or release, or the containment and cleanup, to the extent those effects can be identified; (8) a description of the containment or cleanup action taken; (9) the estimated amount of (A) hazardous substance cleaned up; and (B) hazardous waste generated; (10) the date and method of disposal or treatment of the hazardous substance, contaminated equipment, contaminated materials, contaminated soil, and contaminated water; (11) a description of actions being taken to prevent another discharge or release; and (12) other information that the department requires to fully assess the cause and impact of the discharge or release, including any sampling reports and a description and estimate of any remaining contamination.
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8	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 3, Section 300, pg 50	18 AAC 75.300. Discharge or release notification; reporting requirements. .....(b) A person in charge of a facility or operation shall maintain, and provide to the department monthly, a written record of each discharge or release, including a cumulative discharge or release, of one gallon to 10 gallons of oil solely to land. (c) If a person in charge of a facility or operation has entered into an agreement with the department, as provided under AS 46.03.755(b) or AS 46.09.010(b), for the periodic reporting of a discharge or release of a hazardous substance, the terms of the agreement replace the applicable requirements of this section for the hazardous substance. ...
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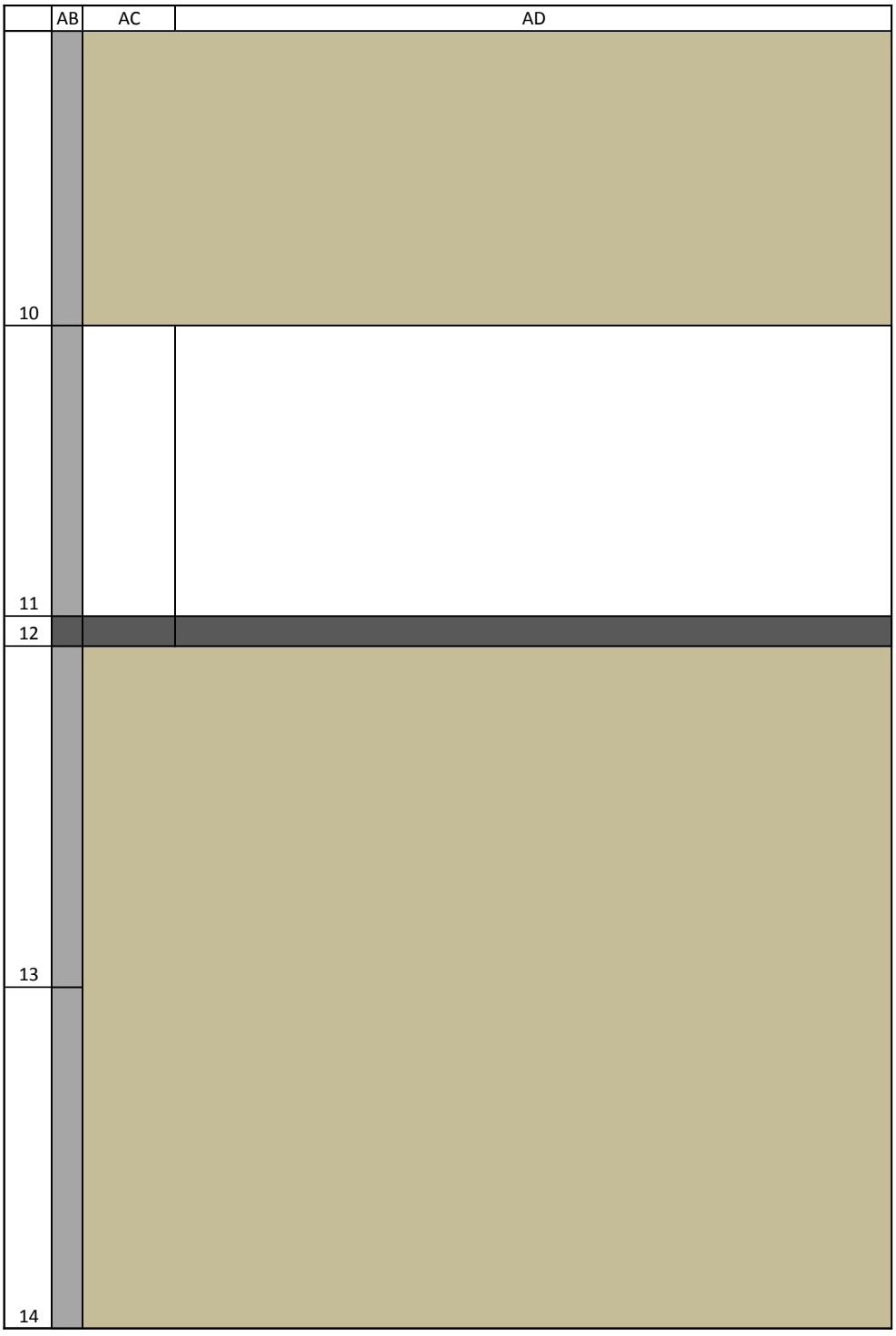
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16	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 3, Section 315, pg 53	18 AAC 75.315. Initial response actions. (a) A responsible person shall investigate, contain, and perform a cleanup of a sudden or recent discharge or release of a hazardous substance (1) in consultation with the department, or upon notification of a discharge or release under 18 AAC 75.300; NOTE CONTINUES FOR 50 PAGES WITH DETAILED CLEAN-UP AND REPORTING REQUIREMENTS

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17	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 3, Section 310, pg 52	18 AAC 75.310. Scope and duration of initial response actions. (a) Immediately after receiving notice from a person or after otherwise becoming aware of a discharge or release of a hazardous substance to land or waters of the state, a responsible person shall, as required by 18 AAC 75.315, immediately contain and control the discharge or release and seek approval of cleanup and disposal plans to be used for that release. ....
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28	Title 46. Water, Air, Energy, and Environmental Conservation	Sec tion 46.04.030 (e), pg 53	(e) The department may attach reasonable terms and conditions to its approval or modification of a contingency plan that the department determines are necessary to ensure that the applicant for a contingency plan has access to sufficient resources to protect environmentally sensitive areas and to contain, clean up, and mitigate potential oil discharges from the facility or vessel as provided in (k) of this section, and to ensure that the applicant complies with the contingency plan. ... The contingency plan must provide for the use by the applicant of the best technology that was available at the time the contingency plan was submitted or renewed. The department shall identify the prevention and response technologies that are subject to a best available technology determination. The department may find that any technology meeting the response planning standards in (k) of this section or a prevention performance standard established under AS 46.04.070 is the best available technology. ... The department may require an applicant or holder of an approved contingency plan to take steps necessary to demonstrate the applicant's or holder's ability to carry out the contingency plan, including (1) periodic training; (2) response team exercises; and (3) verifying access to inventories of equipment, supplies, and personnel identified as available in the approved contingency plan.

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29	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 425 (e) (2), pg 119	(2) Part 2 - Prevention Plan: The prevention plan must include a detailed description of all oil discharge prevention measures and policies employed at the facility, vessel, or operation, with reference to the specific oil discharge risks involved. The prevention plan must describe how the applicant meets all the applicable requirements of 18 AAC 75.005- 18 AAC 75.085. The prevention plan may be submitted as a separate volume, and must include, at a minimum, the following information: .....(B) discharge history -a history of all known oil discharges greater than 55 gallons that have occurred at the facility within the state; the history must include (i) the source, cause, amount of each discharge; (ii) corrective action taken; (iii) an analysis of the relationship, if any, between the frequency, cause, and size of the discharges;, and (iv) a description of actions to be taken to prevent or mitigate similar discharges in the future; .....
30		Article 1, Section 007, pg 2	18 AAC 75.007. General oil pollution prevention requirements. (a) Except where application of the requirements of 18 AAC 75.005 - 18 AAC 75.085 would be preempted by federal law, those requirements apply to each facility or operation for which an approved oil discharge prevention and contingency plan is required under AS 46.04.030 or AS 46.04.055(j). (b) A .....pipeline, ... subject to the applicable requirements of this chapter must be equipped and operated in accordance with this chapter and other state and federal law applicable to the prevention of an oil discharge. ... (e) The owner or operator shall have in place programs designed to ensure that each drill operator, each person who has navigational, towline, security, or maintenance duties, and any other person directly responsible for an activity that might result in a violation of this chapter is free of substance-abuse or medical condition that would impair that person's ability to do that person's job. The requirements of this section may be met ..... (2) for a pipeline, by a program in accordance with 49 C.F.R. Part 199, as revised as of October 1, 2005 and adopted by reference; or ..... (f) The owner or operator shall provide security measures and surveillance appropriate to each component of the operation to minimize the risk of vandalism, sabotage, and unauthorized entry

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31	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 485, pg 164	18 AAC 75.485. Discharge exercises. (a) The department may conduct announced and unannounced discharge exercises to assure that an oil discharge prevention and contingency plan or nontank vessel plan is adequate in content and execution. No more than two exercises will be required for an oil discharge prevention and contingency plan in each 12-month period, unless an exercise demonstrates, in the department's judgment, a plan holder's failure to implement the plan effectively. ... plan holder's failure to implement the plan effectively. (b) Execution of a plan during a discharge exercise will be considered inadequate if the readiness for response and response performance stated in the plan are significantly deficient due to inadequate mobilization or performance of personnel, equipment, other resources, or other factors, including the mobilization or performance of a response action contractor identified under 18 AAC 75.445(i) or 18 AAC 75.446(f). (c) If a plan holder cannot adequately execute the plan during a discharge exercise, the department will, in its discretion, (1) require additional exercises until it is satisfied that the prevention and contingency plan and its execution are adequate; or (2) take other appropriate action as described at 18 AAC 75.490. (d) The department will consider a regularly scheduled training exercise initiated by a plan holder as a discharge exercise if the department monitors, evaluates, or participates in the exercise and concurs that it is equivalent to a discharge exercise conducted by the department. A plan holder shall notify the department in advance of the exercise and shall provide an opportunity for a department representative to be present and participate. (e) The department will conduct announced or unannounced discharge exercises appropriate to the plan holder's current status of operations.
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36	Chapter 42.06 Pipeline Act	Section 42.06.140(a)(4), pg 1	Sec. 42.06.140. General powers and duties. (a) The commission .... (4) may require pipeline carriers and affiliated interests to file with the commission reports and other information and data required or permitted to be required by other provisions of this chapter; ...
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9	liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1(h), pg 46	7.5.1 Controlling activities near pipelines The Licensee shall bring to the attention of relevant parties the following in relation to activities near pipelines: ...(h) The notification requirements in relation to any damage to the pipeline and its coating and equipment. .....

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10	liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1, pg 46	7.5.1 Controlling activities near pipelines ... NOTE: Apart from incident reporting to the regulatory authority where required by legislation, the circumstances of any incident, as defined in the Australian Pipeline Industry Association (APIA) Pipeline Operators Database, should be reported to APIA to enable statistics of pipeline incidents to be gathered.
11	liquid petroleum, Part 3: Operation and maintenance	Section 2.2.5.3, pg 19	2.2.5.3 Accident/incident investigation and reporting The Licensee shall establish procedures for identifying, notifying ... accidents or incidents resulting from the operation and maintenance of the pipeline. This shall cover any event associated with the pipeline that either causes or has the potential to cause- (a) injury or death to pipeline personnel or the public; (b) significant damage to the environment; and/or (c) significant impact on the pipeline's operation or integrity.....
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13	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.9.2.2, pg 70	9.9.2.2 Repair strategy considerations The Licensee shall plan a repair strategy as part of their operating/management documentation taking into account (but not limited to) the following: (a) Considerations when placing out of/returning to service (e .g. isolation or shutdown). (b) Type of repair, replacement or remediation. (d) Risk assessments for various elements of the repair strategy. (g) Temporary repairs (if required) . ..... NOTE: A repair strategy is given in flow chart shown in Figure 9.3.
14	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.10, pg 72	9.10 REPAIR METHODS 9.10.1 General Repair methods, procedures, materials or components shall be subject to design qualification. Repair methods shall be documented. Repair methods or techniques shall be fit for purpose for the conditions under which they are used. They shall have the pressure strength, temperature rating and design life specified by the engineering design. Engineering design of a repair shall take into consideration the damage mechanism and environment, service conditions and properties of existing materials. The typical repair methods are set out in Clauses 9.10 .2 to 9.10 .6. 9.10.2 Replacement ....9.10.3 Grinding ... 9.10.4 Weld deposition repair ... 9.10.5 Repair sleeves ... 9.10.6 Bolt-on clamp ... 9.10.7 Qualification of non-typical repair methods ...

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16	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.9.2, pg 69	INCIDENT 9.9.2 Repair strategy 9.9.2.1 Initial response When a leak or loss of containment is detected, corrective action shall be initiated immediately and damage shall be evaluated promptly. Where the situation is uncontrolled, consideration shall be given to immediate pressure reductions, to minimize loss of inventory and to reduce the likelihood of the situation escalating. The emergency response, as specified in Section 11, shall be activated .... Where a pipeline is damaged or corroded to the extent that continued operation would be unsafe, the Licensee shall ensure that the pipeline is shut down or the operating pressure is reduced to a safe level (see Clause 9.3) until necessary repairs have been completed, inspected and tested and it is safe to resume safe normal operation. Only when immediate shutdown is not practicable, temporary repairs may be made, provided they will be made permanent as soon as possible. Temporary repairs shall be approved and shall not extend over a period of 12 months, except if continued pipeline integrity can be proven. Pipeline FFP shall be monitored during the period of temporary repair.

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17	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.3, pg 57	9.3 INITIAL ASSESSMENT AND REMEDIAL ACTION Where the integrity of a pipeline, or a section of a pipeline, is assessed as being compromised, the operator shall immediately take steps to prevent loss of containment of the pipeline until the integrity of the pipeline is restored. Interim measures shall be taken to mitigate the risk of a failure. This may include pipeline pressure reduction, bypassing, or carrying out temporary repairs and appropriately adjusted surveillance intervals and methods. An MOP shall be established immediately to stabilize any anomaly potentially impacting on pressure containment. The MOP so established shall be documented. NOTE: The minimum pressure reduction should be at least 10%, but preferably 20%, of the operating pressure at time of identification. An engineering assessment should be completed as soon as practicable to confirm the MOP, which may result in a raised or further lowered MOP. If an engineering assessment is carried out, it shall be documented. I AS 2885.3-2012 58 The operating press ure should not be permitted to be raised above the established MOP until the anomaly has been in spected and assessed. A permanent repair shall be pl anned, documented and implemented fo llowing the temporary repair. The repair shall reinstate the integrity of the pipeline for the MAOP. Prior to the commencement of any repair work, a risk assessment shall be undertaken to examine all of the potential threats to the public, operating personnel, and the continuity of supply that will arise as a res ult of the repair, and a ri sk management plan shall be developed. The repair shall take into consideration the requirements of Clause 9.1 0. ..... For penetration anomalies (in addition to the requirements for circumferential orientated anomalies), the operating pressure should be reduced to as low as possible to minimize release rates. Environmental considerations take precedence in this respect; however, this Standard does not include requirements for, or information on, environmental considerations.
18		Section 9.4, pg 58	9.4 PIPE WALL ANOMALY ASSESSMENT 9.4.1 .....Where a pipeline anomaly is detected, it shall be investigated to determine its nature, extent, depth and cause. The anomaly shall be evaluated to confirm acceptability and the current MAOP shall be confirmed. In the event that the MAOP is determined to have been compromised, a safe operating pressure shall be determined by assessment in accordance with Clause 9.6 and, if necessary, either a new MAOP shall be established or the affected portion of the pipeline shall be repaired or replaced. Upon completion of engineering assessments (see Clause 9.6) carried out on a pipeline anomaly, the Licensee may decide to deem such anomaly as acceptable (damage not requiring repair). For all anomaly types, including all known applicable stresses and bending moments the anomaly area may be subjected to, shall be considered in the assessment. If deemed as a defect, repair or remediation shall be carried out in accordance with Clause 9.10. Recommendations from pipe wall anomaly assessments and remammg life assessments (anomaly degradation rates) shall be incorporated into the PIMP. NOTE: Requirements for detailed assessment of pipeline anomalies are given in Clause 9.6.

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19	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.4.2.3, 9.4.2.4, pg 59	9.4.2.3 Gouges, grooves and notches ..... Gouges, grooves and notches deeper than 0.25 mm depth are considered defects and shall be removed, replaced or otherwise repaired. Gouges, grooves and notches above 0.25 mm and up to 10% of wall thickness may be removed by grinding without further wall thickness assessment, provided they are not associated with dents or micro-cracking. The requirements for non-destructive testing (NDT) for dents and micro-cracking associated with gouges, grooves and notches shall be assessed by the Licensee. Wall thickness loss due to grinding shall be assessed in the same manner as for corroded pipe wall. Detailed engineering assessment shall be carried out to confirm the acceptability of gouges, grooves and notches outside of the criteria specified in this Section. NOTE: Detailed assessment of pipeline anomalies is given in Clause 9.6. Gouges, grooves and notches are considered severe anomaly types as tt ts difficult to establish the pipe's strength and ductility at the location of maximum deformation. In the absence of adequate understanding of material condition data, the requirements set out in this Clause shall apply. 9.4.2.4 Dents and buckles ..... Dents with gauges shall be removed or stabilized by a sleeve. Workmanship standards set out by AS 2885 .I and assessment techniques set out in Table 9.2 shall be taken into consideration when assessing dents. Anomalies such as dents and buckles shall be inspected using visual and/or mechanical measurement methods capable of determining the depth and shape of the anomaly, the location of the anomaly with respect to seam welds and the presence of gouges, grooves or other anomalies within or in close proximity to the dents/buckles . Where considered necessary, non-destructive methods capable of sizing dents and buckles shall be utilized. Dents containing corroded areas deeper than 10% or up to 40% of nominal wall thickness are considered defects unless engineering assessment determines otherwise. Corroded areas greater than 40% of nominal wall thickness within dents are considered defects and shall be removed, replaced or otherwise repaired.
20	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.9, pg 68	9.9 PIPELINE REPAIRS 9.9.1 General Anomalies that are assessed as defects in pipelines shall be repaired. The objective of repair is to ensure that the repaired pipe is fit for service over the remaining pipeline life, having sufficient structural integrity to withstand all the identifiable forces to which it may be subjected during operations, including the MAOP and cyclic pressure fluctuations, with an acceptable safety margin. Repairs are undertaken for- (a) pressure containment; (b) strengthening; or; (c) a combination of the two. NOTE: Table C1 of Appendix C provides general guidance on applicable type of repair methods for typical pipeline defects (see APl 11 60). Repair procedures shall be formally documented and reviewed. The repair methods, equipment and all repair materials shall be recorded along with NDT records verifying that the repair is effective. As a minimum, the following parameters shall be considered in repair selection: (i) Pipe material. (ii) Pipeline operating characteristics. (iii) Pipeline configuration and stress state. (iv) Pipeline location. (v) Nature and extent of anomaly. (vi) MOP restriction as per Clause 9.8 . For all types of defects, replacement of a defective section may be considered as an acceptable repair method .
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25	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.5.3, pg 19	2.2.5.3 Accident/incident investigation and reporting The Licensee shall establish procedures for.... investigating and reporting accidents or incidents resulting from the operation and maintenance of the pipeline. This shall cover any event associated with the pipeline that either causes or has the potential to cause- (a) injury or death to pipeline personnel or the public; (b) significant damage to the environment; and/or (c) significant impact on the pipeline's operation or integrity. Reporting shall include notification of relevant regulatory authorities as required by legislation. NOTE: Apart from incident reporting to the regulatory authority where required by legislation, the circumstances of any incident, as defined in the Australian Pipeline Industry Association (APIA) Pipeline Incident Database, should be reported to APIA to enable statistics of pipeline incidents to be gathered.
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28	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.5, pg 81	10.5 PIPELINE FAILURE Where a pipeline failure occurs, a full and detailed root cause analysis shall be completed, in conjunction with a safety management study and system review, and a mitigation strategy revised or developed prior to the pipeline being returned to full operation. NOTES: 1 The threats identified in the root cause analysis should be used in the remaining life review. 2 The mitigation strategy may include a pipeline repair program. 3 Data from the investigation should be collected and recorded for future reference in the safety management study and remaining life reviews.

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34	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.5.3, pg 19	2.2.5.3 Accident/incident investigation and reporting The Licensee shall establish procedures for....recording..... accidents or incidents resulting from the operation and maintenance of the pipeline. This shall cover any event associated with the pipeline that either causes or has the potential to cause- (a) injury or death to pipeline personnel or the public; (b) significant damage to the environment; and/or (c) significant impact on the pipeline's operation or integrity .....
35	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 12.3(g,l,n), pg 88	12.3 OPERATION AND MAINTENANCE RECORDS The Licensee shall prepare a records management plan. The records management plan shall detail the records to be obtained, the records to be retained, storage methods and procedures to maintain currency of the records, until the abandonment of or removal of the pipeline. Records that shall be included in the plan are the following: ..... (g) Details of any leaks, ruptures or other loss of containment events. ... (i) Repairs and maintenance work to pipelines and stations. ... (n) Incidents and subsequent preventative actions. ...

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38	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.4(f), pg 18	2.2.4 Implementation The Licensee shall implement the plans and procedures of the pipeline management system covering at least the following : .....(f) Records management (Section 12).
39	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 12, pg 86	SECTION 12 RECORDS MANAGEMENT 12.1 BASIS OF SECTION The primary purpose of records is to preserve- (a) historical information required for the safe operation and maintenance of the pipeline over the pipeline's life; (b) objective evidence of pipeline management system effectiveness and compliance; and (c) records of decision-making and approvals. The Licensee shall establish procedures for the identification, collection, storage and disposal of records pertinent to the pipeline management system and to the achievement of the above objectives and document those in the record management plan. Procedures shall cover electronic as well as paper-based records. As a minimum, the following shall be addressed: (i) The records to be retained. (ii) The retention period of each record type. (iii) The records storage and preservation methods. (iv) Record update and maintenance procedures. The Licensee shall obtain and maintain records that are necessary to(A) safely operate and maintain the pipeline; (B) demonstrate compliance with AS 2885.1, AS 2885 .2, AS/NZS 2885 .5 and this Standard; (C) identify decisions made and actions taken by the Licensee; and (D) confirm the fitness for purpose of the pipeline at any stage of the pipeline operating life.

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42	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.6, pg 20	2.2.6 Consultation, communication and reporting The Licensee shall identify external people and organizations with a legitimate interest in the safety and environmental aspects of the pipeline's operation and maintenance. These may include landowners, contractors, utilities, local and emergency authorities, regulatory authorities and government agencies. The Licensee shall establish procedures for regular consultation with, and communication and reporting to, these identified stakeholders. These procedures should include statutory reporting requirements.

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43	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.3, pg 43	PUBLIC SAFETY 7.3 THIRD-PARTY PIPELINE AWARENESS 7.3.1 Community and stakeholder awareness Regular communication with the community and stakeholders and the relevant authorities is required to raise and reinforce awareness of the presence of a pipeline and the constraints with respect to the use of the land on and near the pipeline. Awareness programs enhance the effectiveness of other procedural controls such as pipeline markers, buried marker tape and call services. The Licensee shall establish a liaison program to communicate to the community and stakeholders the presence of the pipeline and the importance of the integrity of the pipeline for the safety of the public and the environment. When communicating with the relevant parties, the Licensee shall advise of any constraints that apply to the pipeline easement.

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3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**
4	**APPROVAL**			
5	Pipeline Act	Part 7, Section 42, pg 27	42 No ground disturbance may be undertaken in the right of way for a pipeline without the approval of the licensee of the pipeline in accordance with the regulations, or, if approval cannot reasonably be obtained from the licensee, without the approval of the board	Before starting a ground disturbance in a pipeline right of way (ROW), licensee, or alternatively Board approval must be obtained.
6	Pipeline Regulation	Part 5, Section 60 (1), pg 30	60(1) For the purposes of section 32(1)(a)(i)(B) of the Act, the distance from the perimeter of the area in which a person proposes to undertake a ground disturbance within which the person shall take all precautions reasonably necessary to ascertain whether a pipeline exists before commencing any work, operation or activity is 30 metres.	A person must take all precautions to determine if a pipeline exists within 30 m from the perimeter of the area of a planned ground disturbance.

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7	Pipeline Regulation	Part 5, Section 58, pg 29	58 No person shall undertake a ground disturbance within 5 metres of the centreline of a pipeline where there is no pipeline right of way without the approval of (a) the licensee of the pipeline, or (b) the Board, if approval cannot reasonably be obtained from the licensee.	If there is no ROW, approval is required for a ground disturbance made within 5m of the centerline of the pipeline.
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15	**PROTECTION OF PIPELINE**			
16	Pipeline Regulation	Part 5, Section 64, pg 32	64 If in the opinion of the Board it is desirable to do so, the Board may require that an existing pipeline located adjacent to a ground disturbance in the controlled area of a pipeline be depressured, operated at a reduced pressure or otherwise protected throughout the period of the ground disturbance.	The Board may order a pipeline be depressured, operated at reduced pressure or protected from an adjacent ground disturbance within the controlled area.
17	**PRIOR TO GROUND DISTURBANCE**			
18	Pipeline Act	Part 6, Section 32(1), pg 21	32(1) A person proposing to undertake or undertaking a ground disturbance shall, before commencing any work, operation or activity, (a) take all precautions reasonably necessary (i) to ascertain whether a pipeline exists within (A) the area in which the person proposes to undertake or undertakes the ground disturbance, and (B) the distance, prescribed in the regulations, from the area referred to in paragraph (A), (ii) to determine who is the licensee of a pipeline in existence within the area or distance referred to in clause (a)(i), and (b) notify the licensee referred to in clause (a)(ii) of the nature of the proposed ground disturbance and the proposed schedule for the undertaking of that ground disturbance in accordance with the regulations.	Before starting a ground disturbance, determine if a pipeline exists in the affected area; or, within the prescribed distance from the area. The licensee must also be determined and notified.

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19	Pipeline Act	Part 6, Section 32(2), pg 21	32 (2) A licensee shall, on the request of a person proposing to undertake or undertaking a ground disturbance, provide to that person any information respecting a pipeline in existence within the area or distance referred to in subsection (1)(a)(i) that is contained in the records of the licensee and is required by that person for the purpose of complying with subsection (1) and the regulations. (3) A licensee of a pipeline that may be or is affected by a ground disturbance shall provide to the person proposing to undertake or undertaking the ground disturbance any assistance that the person may reasonably require to enable the person to comply with this Act and the regulations.	A licensee will provide information respecting any existing pipelines and any reasonably required assistance to comply with the Act.
20	Pipeline Regulation	Part 5, Section 60 (2)-(5), pg 30	60 (2) A person proposing to undertake a ground disturbance within the controlled area of a pipeline shall notify the licensee of the pipeline and Alberta One-Call at least 2 days and not more than 10 days, excluding Saturdays, Sundays and holidays, prior to commencing the ground disturbance so that Alberta One-Call may notify the licensee of any buried pipeline of the intent to disturb the ground and request that the licensee identify and mark the location of the pipeline. (3) The identifying and marking referred to in subsection (2) must be provided no later than 2 days, excluding Saturdays, Sundays and holidays, after the licensee is notified of the proposed ground disturbance unless a longer time period is agreed to by the licensee and the person proposing to undertake the ground disturbance. (4) If the licensee has notice of a proposed ground disturbance in the controlled area of a pipeline, the licensee shall, prior to the commencement of the ground disturbance, accurately mark on the surface of the ground the horizontal position and alignment of the pipeline with clearly distinguishable warning signs and markers at adequate intervals in accordance with the Uniform Color Code, and provide documentation of the markings to the person proposing to undertake the ground disturbance. (5) A person shall not proceed with a ground disturbance within the controlled area of a pipeline until the locating and marking of the pipeline has been completed.	Notify licensee and Alberta One-Call between 2 and 10 business days prior. Alberta One-Call will notify licensee of the plan; who, by 2 days or later if the person agrees, will mark, with markers and signs, the horizontal position and alignment of the pipeline at adequate intervals and provide marking documentation. A ground disturbance will not begin until this is complete.

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21	Pipeline Regulation	Part 5, Section 60 (6)-(9), pg 30	60 (6) If the person proposing to undertake the ground disturbance wishes to carry out the identifying and marking of the pipeline in accordance with the requirements of subsection (4) and obtains the prior agreement of the licensee to do so, the licensee may delegate its responsibility under subsection (4) to the person. (7) Notwithstanding subsection (4), alternative methods of locating and marking a pipeline may be used if agreed to by the licensee and the person proposing to undertake the ground disturbance. (8) Subsections (4) and (5) do not apply if (a) the ground disturbance is proposed to be undertaken in the controlled area outside the right of way of an existing pipeline, (b) the right of way or pipeline is clearly separated from the proposed ground disturbance by a fence, highway, road or other visible improvement, and (c) the exemption from the requirements of subsections (4) and (5) is agreed to by the licensee of any affected pipeline. (9) The requirement for 2 days' notice in subsection (2), and all the requirements of subsections (3), (4) and (5), do not apply if a ground disturbance is undertaken in connection with the restoration of essential public services in an emergency or containment of an environmental emergency and the alternative notification, location and excavation procedures are agreed to by the licensee of any affected pipeline.	The licensee may delegate marking to the person if the person wishes. Marking is not required if the ground disturbance is in the controlled area outside the right of way, or separated by a fence, highway or other visible improvement and the licensee agrees to exemption. If a ground disturbance is required during an emergency or other deemed critical event, requirements (2) through (5) do not apply where agreed to by licensee.
22	Pipeline Regulation	Part 5, Section 61, pg 30	61(1) Before commencing a ground disturbance in the controlled area of a pipeline where uncontrolled access over the pipeline by equipment may cause damage to the pipeline, the person responsible for the proposed ground disturbance shall erect temporary fencing of the pipeline right of way to limit access. (2) When necessary, the temporary fencing shall allow for crossings of the pipeline right of way. (3) The location of crossings and the precautions to be taken to protect pipelines from damage at those locations shall be determined and agreed to by the licensee and the person responsible for the proposed ground disturbance, and failing agreement, either party may apply to the Board for a decision.	If uncontrolled access over the pipeline by equipment in the controlled area could damage it, the person shall erect temporary fencing of the pipeline ROW to limit access, allowing for crossings of the ROW where necessary. Crossing locations/precautions to protect the pipeline will be determined and agreed to by the licensee and the person, or, either party may apply to the Board for a decision.

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31	**DURING GROUND DISTURBANCE**			

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32	Pipeline Regulation	Part 5, Section 63, pg 31	63(1) A licensee of an existing pipeline who has been notified under section 32(1)(b) of the Act of a proposed ground disturbance shall (a) have a representative inspect the pipeline before the commencement of the ground disturbance to ensure that the identifying and marking referred to in section 60(4) have been properly carried out, (b) ensure that its representative has in his or her possession when on the site of the ground disturbance a copy of the written approval for the ground disturbance, (c) ensure that its representative has completed a supervisory level training course in ground disturbance practices and is currently certified to supervise a ground disturbance, and (d) carry out any inspections of the ground disturbance that are necessary to ensure the continued safety of the pipeline. (2) The person responsible for a ground disturbance shall keep all pipeline warning signs or markers referred to in section 60(4) visible and legible for the duration of the ground disturbance and shall replace or relocate them if necessary. (3) A person undertaking a ground disturbance who exposes any part of a pipeline shall notify the licensee at least 24 hours prior to backfilling the pipeline, and on being so notified, a representative of the licensee shall inspect without delay the exposed part of the pipeline before backfilling to ensure that no damage has occurred. (4) A licensee shall retain a record of any inspections conducted under subsection (3) for a period of 2 years from the date the record is made and shall submit a copy of the record to the Board on request.	The licensee will select a representative certified in a supervisory level training course in ground disturbance practices, and provide them with a copy of the ground disturbance approval. The representative will inspect the pipeline to ensure it is properly marked before and during the disturbance and inspect to ensure the safety of the pipeline. The person will keep all signs and markers visible and legible, and replace or relocate if necessary. If the pipeline is exposed, the person must notify the licensee at least 24 hours prior to backfilling for inspection of the exposed section to ensure no damage. The licensee will keep a record of the inspections for 2 years and submit a copy to the Board on request.
33	Pipeline Regulation	Part 5, Section 65, pg 32	65(1) An excavation conducted for the purpose of locating a pipeline shall be done by hand excavation until the pipeline is sufficiently exposed to enable it to be identified. (2) A representative of the licensee shall be present at the time the pipeline is being exposed, unless the licensee and the person undertaking the ground disturbance agree otherwise. (3) A person proposing to undertake a ground disturbance that will cross or be carried out within 5 metres of an existing pipeline shall, before commencing any mechanical excavation, locate and expose the existing pipeline by hand excavation. (4) Hand excavation procedures must be acceptable to the licensee of the pipeline. (5) After a pipeline has been located in accordance with this section, no person shall use or cause to be used mechanical excavation equipment within 600 millimetres of the pipeline or within any distance beneath a pipeline, except under the direct supervision of a representative of the licensee of the existing pipeline. (6) Notwithstanding subsection (3), an existing pipeline need not be exposed if (a) it has been located, marked and inspected in accordance with sections 60 and 63, and hand excavated to a distance of 5 metres on each side of the located and marked position, with the hand excavation being made to a depth at least 150 millimetres greater than that required for the ground disturbance, or (b) its position has been verified to the satisfaction of the licensee by comparison with recorded measurements of the pipeline taken during a previous exposure. (7) If a proposed ground disturbance will be parallel to and within 5 metres of a pipeline, the pipeline may be exposed at intervals along the pipeline, with the length of the intervals being at the discretion of the licensee of the existing pipeline or at the Board's direction. (8) If a pipeline is to be exposed by the licensee of the pipeline, the licensee may make written application to the Board for approval to use pipeline exposure procedures other than those referred to in subsection (6) or (7).	A pipeline must be located by hand excavation until it can be identified. It will be exposed with the representative present unless the licensee and person agree otherwise. Before any mechanical excavation, if a ground disturbance crosses or is within 5 metres of an existing pipeline, it will be located and exposed by hand excavation; OR, located, marked and inspected, and hand excavated 5 metres on each side from the marking and 150 millimetres deeper than required for the ground disturbance; OR, its position is verified to licensee satisfaction by comparison with recorded measurements from a previous exposure. Hand excavation procedures must be acceptable to the licensee. Once located, mechanical excavation equipment cannot be used within 600 millimetres of the pipeline or any distance beneath without direct representative supervision. If the disturbance will be parallel to and within 5 metres of the pipeline, it may be exposed at intervals at the discretion of the licensee or the Board. If a pipeline is to be exposed by the licensee of the pipeline, they can apply to use alternative exposure procedures.

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39	Pipeline Regulation	Part 4, Section 45, pg 25	45 If a licensee detects or becomes aware of any current or proposed surface construction activity within the controlled area of a pipeline conveying LVP product, HVP product or gas containing more than 10 moles of hydrogen sulphide gas per kilomole of natural gas, the licensee shall (a) if the surface construction activity has not commenced, meet with the party proposing to carry it out to determine what safety measures, if any, are necessary to ensure the safety of the pipeline, (b) if the surface construction activity has commenced, meet immediately with the party carrying it out on the site of the activity for the purpose set out in clause (a), (c) if there is uncertainty concerning the depth of the pipeline, confirm the depth of the pipeline prior to any further or proposed surface construction activity, (d) identify and mark on the ground the location of the pipeline and the limits of the controlled area, and (e) supervise the surface construction activity at least once each day on which the surface construction activity is taking place to ensure that all necessary safety measures are being implemented.	Prior to any further or proposed construction activity within the controlled area of a LVP/HVP/H2S pipeline, the licensee will meet with the party (immediately if work has commenced) to determine measures necessary to ensure pipeline safety, confirm pipeline depth if uncertain, identify and mark on the ground the pipeline location and limits of the controlled area, and supervise the activity at least once each day to ensure necessary safety measures are being implemented.
40	**SIGNS**			
41	Pipeline Regulation	Part 6, Section 68(1), pg 33	68(1) A licensee shall install pipeline warning signs (a) at each side of the crossing where a pipeline crosses a highway, road, railway or watercourse, (b) within the land acquired for the pipeline and facing the highway, road, railway or watercourse, (c) if the pipeline right of way adjoins the right of way of a highway, road or railway, on the common boundary of the rights of way but not within the right of way of the highway, road or railway, and (d) if the pipeline is (i) located in a ditch or unpaved area in the right of way of a highway or road, or (ii) conveying HVP product in an urban area, at intervals that will clearly and continuously mark the location of the pipeline.	A licensee shall install pipeline warning signs at each side of the crossing of a pipeline and a highway, road, railway or watercourse; within the pipeline land and facing the highway, road, railway or watercourse; on the common ROW boundary (not within) of a pipeline and a highway, road or railway; and if the pipeline is located in a ditch or unpaved area of the ROW of a highway or road, or conveying HVP product in an urban area, at intervals that will clearly and continuously mark the pipeline location.

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42	Pipeline Regulation	Part 6, Section 68 (3)-(8), pg 34	68(3) Notwithstanding subsection (2)(b), a licensee may install temporary warning signs not in accordance with Schedule 1 while surface restoration activities are in progress but shall install permanent warning signs in accordance with Schedule 1 as soon as surface restoration activities are completed. (4) A licensee shall, regardless of the operational status of the pipeline and for all pipelines, including abandoned pipelines, maintain pipeline warning signs and shall replace any pipeline warning sign that becomes defaced, worn out or illegible or that is missing or destroyed. (5) A licensee shall, regardless of the operational status of a pipeline and for all pipelines, including abandoned pipelines, update all warning signs by replacing them with new signs or applying durable permanent adhesive decals bearing the updated information (a) before a telephone number indicated on the warning sign becomes invalid, and (b) within 180 days of a change in any of the other information required by Schedule 1 unless otherwise authorized by the Board. (6) If a pipeline or part of a pipeline has been removed, any existing warning signs in the area from which the pipeline or part of the pipeline has been removed shall also be removed. (7) A licensee may apply to the Board for permission to install warning signs otherwise than in accordance with Schedule 1 in exceptional circumstances. (8) A licensee shall not indicate on a pipeline sign that a pipeline is abandoned.	Temporary warning signs may be installed during surface restoration, and permanent warning signs once completed. Warning signs must be maintained, replaced and updated regardless of operational status (abandoned pipelines should not be indicated on the sign). Updates include before a telephone number becomes invalid, and within 180 days of a change to information required by Schedule 1. Associated warning signs should be removed along with a pipeline. A licensee may apply to the Board to install signs not in accordance with Schedule 1.
43	Pipeline Regulation	Part 6, Section 69, pg 35	69 Warning signs for a pipeline conveying HVP product must clearly indicate the name of the highest vapour pressure HVP product that may be conveyed.	Sign must indicate highest possible HVP name.
44	Pipeline Regulation	Part 6, Section 70, pg 35	70(1) A licensee may install group pipeline warning signs for a group of pipelines in the same right of way, rather than a separate sign for each pipeline, if (a) the licensee is the same for each pipeline in the group, (b) each pipeline in the group conveys the same product, (c) the warning sign, in accordance with Schedule 1, identifies that there are other pipelines close by, and (d) none of the pipelines in the group convey HVP product or gas containing more than 10 moles of hydrogen sulphide gas per kilomole of natural gas. (2) The warning signs for a group of pipelines must be placed on both sides of the right of way containing the group of pipelines and must not be more than 60 metres apart.	Group signs in the same ROW can be used where the licensee and the product (if not HVP/H2S) are the same, the warning sign identifies there are other pipelines close by, and they are placed on both sides of the right of way of the group and not more than 60 metres apart.
45	Energy Development Applications and Schedules	Dir. 056, Section 6.9.17 (48)(e), pg 134	6.9.17 ... 48) When changing the substance, the applicant/licensee must consider the following and take appropriate mitigative actions to ensure continued compliance: ... e) pipeline warning sign requirements—the licensee must update pipeline warning signs to reflect the new substance before operations begin	
46	**CHANGE OF SURROUNDINGS**			
47	Pipeline Regulation	Part 2, Section 12, pg 15	12 If CSA Z662 requires a pipeline to be altered because of a change in its surroundings, the Board may, on application, determine whether the pipeline is suitable and safe for continued service under the original standards to which it was built and if satisfied may exempt the licensee from any or all of the requirements of CSA Z662.	The Board may exempt a licensee from the CSA Z662 requirement to alter a pipeline due to a change in its surroundings if it feels satisfied it is suitable for continued service.

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48	Pipelines - Requirements and Reference Tools	Dir. 077, Part B, Section 5.1, pg 65	.....To provide for continued safety, any pipeline affected by new development, road widening, re-alignment, or other work must be evaluated to determine whether it must be upgraded, lowered or receive armouring treatment to accommodate the extra stresses due to road loadings.	A pipeline affected by a change to its surroundings must be re-evaluated.
49	Pipelines - Requirements and Reference Tools	Dir. 077, Part B, Section 5.2, pg 65	5.2... Clause 10.8.2 in CSA Z662-07 requires that existing pipelines that are to be crossed by roads must at those locations be either upgraded or subjected to an engineering assessment and detailed engineering analysis of all loads expected to be imposed, including the resulting combined stresses in the pipeline. Where the engineering assessment concludes that the pipeline is in satisfactory condition, any crossing design may be used that results in acceptable combined pipe stresses in accordance with the requirements of Clause 4.6. Load-distributing structures, such as concrete slabs, may be appropriate for such situations.	Existing pipeline to be crossed by roads must be upgraded or have an assessment completed on expected loads/stresses. If the pipeline is satisfactory, any crossing design may be used inline with Clause 4.6.
50	Pipelines - Requirements and Reference Tools	Dir. 077, Part B, Section 5.3, pg 65	5.3 Slab Design The pipeline licensee is responsible for completing the required engineering assessment to determine if the pipeline is in satisfactory condition and whether a load-distributing structure would result in acceptable combined stresses. Clause 10.14.6 in CSA Z662-07 sets out the requirements for the engineering assessment and the requisite documentation, which must be retained for the life of the pipeline. Clause 10.14.6.1 requires engineering assessments to be conducted only by, or under the direct supervision of, individuals with demonstrated understanding and experience in the application of engineering and risk management principles related to the issue being assessed.	The licensee is responsible to complete the engineering assessment to determine if the pipeline is in satisfactory condition, and if a load-distributing structure would result in acceptable stresses. The assessment requirements are in clause 10.14.6 in CSA Z662-07. Supervision must be under those with understanding and experience in application of engineering and risk management principles.
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52	**ONE-CALL**			
53	Pipeline Regulation	Part 5, Section 59, pg 29	59 Every licensee shall register with the Alberta One-Call service and shall (a) register every licensed pipeline with Alberta One-Call regardless of the operational status of the pipeline	All licensed pipelines must be registered with Alberta One-Call.

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57	**SOIL LoADING**			
58	Pipeline Regulation	Part 5, Section 66, pg 33	66 No person shall operate a vehicle or equipment across a pipeline at a point that is not within the upgraded and traveled portion of a highway or public road without obtaining approval from the licensee of the pipeline unless (a) the vehicle or equipment is used for farming operations, (b) the vehicle is an off-highway vehicle as defined in section 117(a)(iii) to (viii) of the Traffic Safety Act, or (c) the vehicle is a private passenger vehicle as defined in section 1(1)(jj) of the Traffic Safety Act and has a nominal chassis rating of not greater than 3/4 of a ton.	Licensee approval is required for a vehicle or equipment to cross a pipeline if it is not the upgraded and traveled portion of a highway or public road; unless it is used for farming operations, it is an off-highway vehicle, or a private passenger vehicle with a nominal chassis rating of not greater than 3/4 of a ton.

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60	**EARTH COVER MAINTENANCE / MANAGEMENT**			
61	Pipeline Regulation	Part 2, Section 20(2),(3), pg 18	20(2) Unless otherwise authorized by the Board, the minimum earth cover set out in subsection (1) must be maintained for all operating and discontinued pipelines. (3) Unless otherwise specified by the Board, for a pipeline existing at the time that this Regulation comes into force, if lesser earth cover was permitted by the construction standards and regulatory requirements in place at the time of construction, that lesser cover is acceptable.	Unless the Board determines otherwise, the minimum earth cover for any pipeline must be at all times maintained for all operating and discontinued pipelines. If lesser earth cover was permitted at the time of construction of a pipeline, that lesser cover is acceptable.
62	Energy Development Applications and Schedules	Dir. 056, Section 6.9.17 (48)(b-d,f), pg 134	6.9.17 ... 48) When changing the substance, the applicant/licensee must consider the following and take appropriate mitigative actions to ensure continued compliance: ... d) depth of pipeline cover	

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3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5	Oil and Gas Activities Act	Section 76 (1), pg 45	76 (1) Subject to subsection (3), a person must not ..... (b) carry out a prescribed activity along, over or under a pipeline or within a prescribed distance of a pipeline unless (c) the pipeline permit holder agrees in writing to the construction or the carrying out of the prescribed activity, either specifically or by reference to a class of construction projects or activities, (d) the commission, by order issued under subsection (2), approves the construction or the carrying out of the prescribed activity, either specifically or by reference to a class of construction projects or activities, or (e) the construction or prescribed activity is carried out in accordance with the regulations.	A ground disturbance must not start over, under or within the prescribed distance of a pipeline unless the permit holder agrees, the commission approves or it is in accordance with the regulations.	AB is LOWER than BC in that AB has a shorter prescribed distance of 30 metres compared with 40 metres in BC. AB EXCEEDS BC as AB requires notification within 30 metres, and approval from the licensee OR the Board within the ROW, or 5 metres where there is no ROW. BC requires permission from Permit Holder, OR permission from the Commission, OR accordance with the regulations within 40 metres. This means in BC permission for a ground disturbance is not required from the Permit Holder or Commission if it is in accord with the regulations.
6	Oil and Gas Activities Act General Regulation	Section 11, Pg 5	Pipeline crossing distances 11 (1) In this section, "ground activity" means any work, operation or activity that results in a disturbance of the earth,.... (2) A ground activity is a prescribed activity for the purposes of section 76 (1) (b) of the Act. (3) The following distances are prescribed for the purposes of section 76 (1) of the Act: (a) 40 m, for any activity other than the prescribed activity referred to in subsection (2); (b) 40 m, for the prescribed activity referred to in subsection (2).	Ground disturbance is a prescribed activity in the act.	

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16	Oil and Gas Activities Act	Section 76 (2 3,5), pg 45	76 (2) The commission, on application by a person referred to in subsection (1), may issue an order for the purposes of subsection (1) (d) and in doing so may impose any conditions that the commission considers necessary to protect the pipeline. (3) The commission must approve (a) the construction referred to in subsection (1) (a), and (b) the carrying out of a prescribed activity under subsection (1) (b) by the government or a municipality, but may impose conditions referred to in subsection (2) in the order issued under that subsection. ..... (5) The commission may order a pipeline permit holder whose pipeline is the subject of an order issued under subsection (2) to do one or both of the following: (a) with the approval of the Lieutenant Governor in Council, relocate the pipeline to facilitate the construction or prescribed activity approved by the order issued under subsection (2); (b) take the actions specified in the order that the commission considers necessary to protect the pipeline.	The commission can issue an order and impose any conditions necessary. The commission must approve, and may impose conditions. The commission may require the permit holder to relocate the pipeline (with approval of Governor in Council), or take specified actions to protect the pipeline.	AB EQUALS BC as both may order conditions to protect a pipeline.
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18					AB EXCEEDS BC in that AB states "all precautions reasonably necessary" must be taken to determine if a pipeline exists and who the licensee is. BC (in the act and regulations) does not require this determination.

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19	Oil and Gas Activities Act	Section 76 (4), pg 45	32(4) The commission, for the purposes of deciding whether to issue an order under subsection (1) or impose conditions under subsection (2), may require a pipeline permit holder to submit information regarding the pipeline permit holder's pipeline.	The commission may require a permit holder to submit information regarding the pipeline.	AB is COMPARABLE to BC as in AB, licensee pipeline information is provided to the person, whereas in BC it is provided to the regulator. AB is HIGHER than BC because it also requires licensee to provide assistance to help person comply with the Act and regulations. BC (in the act and regulations) does not.
20					AB is HIGHER than BC in that (in the act and regulations) BC does not detail how to use BC One Call, require anything of the licensee, detail how the pipeline will be protected (ie: markers, temporary fencing), give timelines regarding notification and response, discuss marking when the disturbance is outside the controlled area or ROW or discuss emergency situations.

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32					AB is HIGHER than BC in that (in the act and regulations) BC does not set out requirements for the person, licensee or representative to follow during the activity such as exposure procedures.
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41					AB is HIGHER than BC in that (in the act and regulations) BC does not set out requirements regarding signage.

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47					AB is HIGHER than BC in that (in the act and regulations) BC does not discuss management of changes to surroundings.

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53	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 7, pg 4	Integrity management and damage prevention programs 7 (1) A pipeline permit holder must not operate a pipeline approved by the permit unless .....(d) the holder is a member of BC One Call.	A permit holder must be a member of BC one call to operate a pipeline.	AB is HIGHER than BC in that it requires each pipeline to be registered with Alberta One-Call, whereas BC (in the Acts and regulations) only specifies the permit holder is a member. AB also requires abandoned pipelines to be registered with Alberta One-Call, BC (in the acts and regulations) does not mention.

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58					AB is HIGHER than BC in that (in the Act and regulations) BC does not set out requirements regarding vehicle operation over a pipeline.

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61	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation				AB is HIGHER than BC in that (in the act and regulations) BC does not require maintaining of cover, or considering cover when making a substance change.
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2	**Saskatchewan**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5	The Pipelines Act	Part IV, Section 20(1),(3), pg 10	Ground disturbances 20(1) No person shall undertake a ground disturbance within 30 metres of a pipeline without giving prior notice to the operator of the pipeline. …. (3) No person shall undertake a ground disturbance within the right of way of a pipeline, or within five metres of the pipeline where no right of way exists, without the consent of the operator of the pipeline or, where that consent cannot reasonably be obtained, without the approval of the minister.	A person must give notice to an operator before a ground disturbance within 30 metres of a pipeline. Approval of the operator or minister must be obtained before a ground disturbance within the ROW; or, where there is no ROW, within 5 metres of the pipeline. To obtain approval from the minister, an application must contain a plan and profile, and any other information the minister may request. A copy of the application must be given to the operator.	AB is EQUAL to SK in that both require notice be given to licensee/operator or regulator within 30 metres; both require approval in the ROW, or within 5 metres where there is no ROW .
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7	The Pipelines Act				
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16	The Pipelines Act	Part IV, Section 20(5), pg 10	(5) The minister may: (a) grant approval on any terms that the minister considers necessary for the protection and safety of the public and the environment and the protection of the pipeline; or (b) refuse to grant approval.	The minister may order terms necessary for the protection of the public, environment or pipeline. The minister may refuse to grant approval.	AB is EQUAL to SK in that both may order conditions to protect a pipeline. AB is LOWER than SK in that SK may also order conditions to protect the public or environment.
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18	The Pipelines Act	Part IV, Section 20(4), pg 10	Ground disturbances 20 (4) An applicant seeking approval from the minister pursuant to subsection (3) must: (a) submit an application containing: (i) a plan and profile of the portion of the pipeline to be affected and of the proposed ground disturbance; and (ii) any other information and material that the minister may request; and (b) serve a copy of the application on the operator of the pipeline at the time of making the application or before the application is made.	A person must give notice to an operator before a ground disturbance within 30 metres of a pipeline. Approval of the operator or minister must be obtained before a ground disturbance within the ROW; or, where there is no ROW, within 5 metres of the pipeline. To obtain approval from the minister, an application must contain a plan and profile, and any other information the minister may request. A copy of the application must be given to the operator.	AB is slightly HIGHER than SK in that AB states "all precautions reasonably necessary" must be taken to determine if a pipeline exists, and who the licensee is. SK (in the act and regulations) does not require this determination, they only require permission which AB also requires. AB is LOWER than SK in that SK details what information is required on the application.

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19	The Pipelines Act	Part IV, Section 20, pg 10	20 (2) An operator who receives notice pursuant to subsection (1) must provide the person who gives the notice with all information that the operator possesses that is relevant to the proposed ground disturbance, including, if requested, a plan and profile of the portion of the pipeline to be affected.	Upon receiving notice, an operator must provide all relevant information to the person, including a plan and profile.	AB is EQUAL to SK in that both require all information to be provided by the person responsible for the pipeline. AB is HIGHER in that it also requires the licensee to provide assistance to help the person comply with the Act and regulations. SK (in the Act and regulations) does not.
20	The Pipelines Regulations	Section 13, Pg 6	Pipelines to be marked 13(3) An operator must locate a pipeline within 72 hours, excluding weekends and holidays, when requested to do so by anyone intending to undertake a ground disturbance.	An operator must locate the affected pipeline within 72 hours.	AB is HIGHER than SK in that SK (in the Act and regulations) does not discuss Sask 1st Call. AB is higher in that the locating of the pipeline must be completed with in 48 hours; whereas SK allows 72 hours. AB is higher in that it gives specific details related to signage, markers and temporary fencing; whereas SK only implies the operator should install signs. AB is HIGHER in that it requires no work to be done until the pipeline has been located and marked. SK (in the Act and regulations) does not. AB is HIGHER in that SK (in the Act and regulations) does not discuss marking when the disturbance is outside the controlled area or ROW, or discuss emergency situations.

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32					AB is HIGHER than SK in that SK (in the Act and regulations) does not set out requirements for the person/licensee or representative to follow during the activity such as exposure procedures.
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41	The Pipelines Regulations	Section 13(1), Pg 6	Pipelines to be marked 13(1) Every operator shall mark with conspicuous signs on the limits of a provincial highway or a road the place at which a pipeline enters and leaves or crosses under the provincial highway or road. ….	An operator must mark the location a pipeline enters, leaves or crosses a provincial highway or road with conspicuous signs.	AB is HIGHER than SK in that it is more specific with where and how to place signs and it details temporary signs, group signs, maintaining, replacing and updating signs including signs for abandoned lines. SK (in the Act and regulations) does not.

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47	The Pipelines Regulations	Section 12(5), Pg 6	(5) If the appropriate CSA standard requires that a pipeline be altered because of a change in the pipeline's surroundings, ... the minister may exempt the pipeline from the required modifications if the operator demonstrates that the pipeline is suitable and safe for continued operation under the original standard.	If a CSA standard requires alteration of a pipeline due to a change in surroundings, the minister may exempt the pipeline if the operator demonstrates it is safe and suitable.	AB is EQUAL to SK in that both can make exemption from CSA. AB is HIGHER in that it further discusses, in the Directives, the evaluations and assessments to a pipeline required per CSA Z662 when it will be affected by new development, road widening, re-alignment, or other work.

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53					AB is HIGHER than SK in that SK (in the Act and regulations) does not discuss SK 1st Call.

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58					AB is HIGHER than SK in that SK (in the Act and regulations) does not set out requirements regarding vehicle operation over a pipeline.

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61					AB is HIGHER than SK in that SK (in the Act and regulations) does not require maintaining of cover, or considering cover when making a substance change.
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2	**CSA**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5					Ground Disturbance not discussed.
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32	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.12, pg. 457	N.12 Inspections, testing, patrols, and monitoring N.12.1 Operating companies shall document and implement the methods and procedures used to conduct inspections, testing, patrols, and monitoring in accordance with Clauses 9 and 10 and, as appropriate, Clause 12. Consideration shall be given to .... (h) inspection of exposed piping for corrosion and other types of imperfections.		AB requires inspection of exposed pipelines, which is in accordance with CSA requirements.
33		N.10.2, pg 455	N.10.2 External interference The options that may be used to reduce the frequency of failure and damage incidents associated with external interference include the following, as applicable: ....(f) enhancement of procedures for pipeline system location and excavation;		AB gives specific instructions related to location and excavation of pipelines, which is in line with CSA requirements.

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34	CSA Z662-11 Annex N Guidelines for Pipeline System IMP				
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41	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.10.2, pg 455	N.10.2 External interference The options that may be used to reduce the frequency of failure and damage incidents associated with external interference include the following, as applicable: ....(d) supplemental markers and signs to identify the presence of pipeline systems;		AB details temporary signs, group signs, maintaining, replacing and updating signs including signs for abandoned lines; which is in line with the CSA requirement.

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47	Pipeline System IMP	N.10.2, pg 455	N.10.2 External interference The options that may be used to reduce the frequency of failure and damage incidents associated with external interference include the following, as applicable: ....(g) installation of structures or materials (e.g., concrete slabs, steel plates, or casings); ...		In line with CSA requirements, AB provides additional guidance for managing changes to pipeline surroundings.

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48	CSA Z662-19 Oil and Gas Pipeline Systems Guidelines for Pipeline	N.10.2, pg 455	N.10.2 External interference The options that may be used to reduce the frequency of failure and damage incidents associated with external interference include the following, as applicable: .... and (i) increased pipe wall thickness		
49	CSA Z662-19 Oil and Gas Pipeline Systems Guidelines for Pipeline System IMP				
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51	CSA Z662-19 Oil and Gas Pipeline Systems Guidelines for Pipeline	N.10.4, pg 456	N.10.4 Natural hazards The options that may be used to reduce the frequency of failure and damage incidents associated with natural hazards include the following, as applicable: ..... (g) installation of structures or materials to protect the system from external loads.		
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53	CSA Z662-19 Oil and Gas Pipeline Systems Guidelines for Pipeline System IMP	N.10.2, pg 455	N.10.2 External interference The options that may be used to reduce the frequency of failure and damage incidents associated with external interference include the following, as applicable: (a) participation in one-call utility location organizations;		AB requires every licensed pipeline to be registered with AB One-Call, which is in line with CSA requirements.

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2	**CANADA (NEB)**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5	National Energy Board Act	Part V, Section 112(1), pg 80	112. (1) Subject to subsection (5), no person shall, unless leave is first obtained from the Board, construct a facility across, on, along or under a pipeline or excavate using power-operated equipment or explosives within thirty metres of a pipeline. ... (5) The Board may make orders or regulations governing .... (c) the circumstances in which or conditions under which leave under subsection (1) or (2) is not necessary.		AB is EQUAL to CAN as both allow the licensee/pipeline company to give approval, and the Board will give approval if the person is unable to obtain it. AB is LOWER than CAN as CAN details many requirements necessary to follow wherein Board approval will not be needed, and defines these requirements in terms of construction and excavation; CAN requires permission within 30 metres of the ROW, whereas AB requires notification within 30 metres of the pipeline, and permission is only needed within the ROW or 5 metres if no ROW; CAN has the additional provision of approval needed within 40 metres for seismic activity.
6	National Energy Board Pipeline Crossing Regulations, Part I SOR/88-528	Section 4 (a-g), Pg 2	4. Leave of the Board is not required for any construction or installation of a facility, other than the installation of an overhead line referred to in section 5, if (a) the construction or installation of the facility takes place in an area other than an offshore area; (b) the facility owner obtains written permission from the pipeline company prior to the construction or installation of the facility and accepts any conditions set out in the permission; (c) the facility owner ensures that the work is carried out in accordance with the technical details that are set out in its request for permission that have been accepted by the pipeline company; (d) the facility owner ensures that the work is completed within two years after the date the permission referred to in paragraph (b) is granted or within a period otherwise agreed on by the pipeline company and the facility owner; (e) where permission is suspended by the pipeline company or the Board in accordance with subsection 14(1) of the National Energy Board Pipeline Crossing Regulations, Part II, the facility owner ceases work; (f) unless otherwise agreed on by the pipeline company and the facility owner and, except in cases of emergency, three working days' notice is given by the facility owner to the pipeline company prior to commencement of construction or installation of the facility; (g) in the case of an emergency, as much prior notice as is practicable is given by the facility owner to the pipeline company prior to commencement of construction or installation of the facility;		

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7	National Energy Board Pipeline Crossing Regulations, Part I SOR/88-528	Section 4 (h-p), Pg 2	4. Leave of the Board is not required for any construction or installation of a facility, other than the installation of an overhead line referred to in section 5, if ..... (h) the facility owner undertakes and complies with all practices stipulated by the pipeline company to the facility owner to lessen any detrimental effect that the facility may have on a pipe; (i) prior to the construction or installation of the facility, the facility owner (i) confirms with the pipeline company that all the pipeline company's pipes in the vicinity have been staked, and (ii) ensures that the pipeline company has explained, to the satisfaction of the facility owner, the significance of the stakes that identify the location of the pipeline company's pipes; (j) the facility owner complies with the instructions of an authorized field representative of the pipeline company regarding the procedures to be followed while working in the vicinity of a pipe; (k) where interference with or alteration of a pipe is necessary, the facility owner obtains prior written consent of the pipeline company; (l) where the facility owner receives the consent referred to in paragraph (k), the work is carried out under the supervision of the pipeline company; (m) the facility owner immediately notifies the pipeline company of any contact with a pipeline company's pipe or its coating; .... (o) the facility owner notifies the pipeline company, in writing, of the proposed abandonment or removal of any facility affecting a pipe or right-of-way of the pipeline; and (p) the facility owner removes or alters any facility that could impede the safe and efficient operation of the pipeline, or that the Board considers should be removed or altered for the protection of property and the environment and the safety of the public and the pipeline company's employees.		
8	National Energy Board Pipeline Crossing Regulations, Part I SOR/88-528	Section 6 (a-h), Pg 5	6. Leave of the Board is not required for an excavation, other than an excavation referred to in section 7, if (a) the excavation takes place in an area other than an offshore area; (b) the excavator obtains written permission from the pipeline company prior to the excavation and accepts any conditions set out in the permission; (c) the excavator ensures that the work is carried out in accordance with the technical details that are set out in its request for permission and that have been accepted by the pipeline company; (d) the excavator ensures that the work is completed within two years after the date the permission referred to in paragraph (b) is granted or within a period otherwise agreed on by the pipeline company and the excavator; (e) where permission is suspended by the pipeline company in accordance with subsection 14(1) of the National Energy Board Pipeline Crossing Regulations, Part II, the excavator ceases work; (f) unless otherwise agreed on by the pipeline company and the excavator and, except in cases of emergency, three working days' notice is given by the excavator to the pipeline company prior to commencement of the excavation; (g) in the case of an emergency, as much prior notice as is practicable is given by the excavator to the pipeline company prior to commencement of the excavation; (h) prior to commencement of the excavation, the excavator (i) confirms with the pipeline company that all the pipeline company's pipes in the vicinity have been staked, and (ii) ensures that the pipeline company explains, to the satisfaction of the excavator, the significance of the stakes that identify the location of the pipeline company's pipes; (i) the excavator does not excavate mechanically within a restricted area; ...		

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9	National Energy Board Pipeline Crossing Regulations, Part I SOR/88-528	Section 6 (j-p), Pg 5	6. Leave of the Board is not required for an excavation, other than an excavation referred to in section 7, if ..... (j) the excavator does not excavate mechanically within three metres of a pipe unless (i) the pipe has been exposed by hand at the point of crossing or, where the excavation runs parallel to the pipe, at sufficient intervals to confirm the location of the pipe, (ii) where the excavation crosses a pipe, the pipeline company has informed the excavator that it has confirmed the location of the pipe by probing, and the pipe is at least six tenths of a metre deeper than the proposed excavation, (iii) where the excavation runs parallel to the pipe, the pipeline company has informed the excavator that it has confirmed the location of the pipe by probing, or (iv) where ground conditions render exposure of the pipe by hand impractical, the pipeline company has agreed that the excavation may be performed safely to within one metre of the pipe, and the pipeline company directly supervises the excavation; (k) when boring directionally or using explosives, unless otherwise authorized by the Board, the excavator complies with the conditions imposed by the pipeline company respecting directional boring or the use of explosives; (l) the excavator complies with the instructions of an authorized field representative of the pipeline company regarding the procedures to be followed while working in the vicinity of a pipe; (m) where interference with or alteration of a pipe is necessary, the excavator obtains prior written consent of the pipeline company; (n) where the excavator receives the consent referred to in paragraph (m), the work is carried out under the supervision of the pipeline company; (o) the excavator immediately notifies the pipeline company of any contact with the pipeline company's pipe or its coating; and (p) unless otherwise agreed on by the pipeline company and the excavator, the excavator notifies the pipeline company at least 24 hours prior to backfilling over the pipe.		
10	National Energy	Section 7, Pg 8	7. Leave of the Board is not required for an excavation required for the maintenance of an existing facility if the circumstances and conditions set out in paragraphs 6(f) to (p) are met.		
11	Excavation and Construction Near Pipelines	Pg. 1	Who is Affected by the Regulations? The regulations apply to anyone who will be excavating using power-operated equipment or explosives within 30 metres (100 feet) of the limits of the right of way (defined as the 30 metre safety zone - see section 112 (1) of the NEB Act) or who will be constructing a facility across, on, along, or under a right of way that is regulated by the NEB. Exceptions to these regulations include the pipeline company itself or its agents and anyone who is disturbing the ground to a depth of less than 0.3 metres (1 foot), not reducing the total cover over the pipe and not constructing or installing a facility		
12	Excavation and Construction Near Pipelines	Pg. 4	When Do you Require Approval from the National Energy Board? If you cannot obtain the pipeline company's permission or you cannot comply with all the conditions in the Regulations, you must obtain the NEB's approval before starting any activity listed under What Activities Require Permission from the Pipeline Company. You will also have to ask the NEB for its approval if: •You believe a condition required by the pipeline company is inappropriate or excessive and you cannot accept it; •The pipeline company has suspended and not reinstated its permission for your proposed activity; or •The excavation or construction is in an offshore area (i.e. in an underwater area off the coast of Canada).		
13	Excavation and Construction Near Pipelines	Pg. 2	What Activities Require Permission from the Pipeline Company? Permission from the pipeline company is required for: •Construction or installation of a facility across, on, along, or under an existing right of way; •Excavation using explosives or power-operated equipment over the right of way; •Operation of a vehicle or mobile equipment across a right of way, outside the travelled portion of a highway or public road; •Excavation using explosives or power-operated equipment within the 30 metre (100 foot) safety zone (see section 112, National Energy Board Act); or •Seismic activity within 40 metres of a pipeline right of way.		

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14	Excavation and Construction Near Pipelines	Pg. 2	What Activities Do Not Require Permission? Under the regulations, you do not require written permission from the pipeline company or approval of the NEB to install overhead lines or to excavate to maintain an existing facility, if you meet certain conditions. Overhead Lines •Overhead lines must meet the Canadian Standards Association Standards for ground to wire clearances for overhead systems; •Unless otherwise agreed on by the pipeline company and the facility owner, three working days notice is given by the facility owner to the pipeline company prior to commencement of installation; •If a pipeline is patrolled by aircraft, aeraial warning devices may be required to be installed and properly maintained by the facility owner; and •Poles, guy wires, towers, anchors or supporting structures of any kind constructed or placed on the right of way or within its projected limits are prohibited. Maintenance to an Existing Facility •When conducting excavation required for the maintenance of an existing facility, conditions outlined later in this guide must be adhered to. (See the National Energy Board Pipeline Crossing Regulations, Part I, sec. 7)		
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16	National Energy Board Act	Part III, Section 48 (1.1), pg 33	48. (1.1) The Board may order a company to take measures that the Board considers necessary for the safety and security of a pipeline.		AB is EQUIVALENT to CAN in that CAN does not make a statement specifically in regards to ground disturbance, but this general statement has the same intent.
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18	National Energy Board Pipeline Crossing Regulations, Part I SOR/88-528	Section 8, Pg 8	8. Where leave of the Board is required, the facility owner or excavator shall file an application for leave with the Board and serve a copy of the application for leave on the pipeline company.		AB is LOWER than CAN as CAN requires a copy of the application also be sent to the pipeline company when seeking approval from the Board. AB (in the Act and regulations), does not specify; CAN specifies exactly how to apply to the Board;

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19	Excavation and Construction Near Pipelines	Pg. 4	How to Appply Directly to the National Energy Board To apply to the NEB, send us a letter which includes the location and full details of the proposed activity. You should refer to the NEB's Filing Manual, under tab C, which provides guidance as to the type of information the Board would typically need to make a decision. .... A copy of your application must be forwarded to the pipeline company so that it can review the information and forward any comments it may have to the NEB.		
20	National Energy Board Pipeline Crossing Regulations, Part II SOR/88-529	Section 7, Pg 3	7. Where a facility owner or excavator applies for leave of the Board, the pipeline company shall, within ten working days after receiving a request for information relevant to the application, give the facility owner or excavator all the information, and provide all reasonable assistance, needed to prepare the application.		AB is EQUIVALENT to CAN as both require all information be given once notified, and in AB assistance given to help the person be compliant, while in CAN assisitance given to help the person make an application.

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23	National Energy Board Pipeline Crossing Regulations, Part II SOR/88-529	Section 8, Pg 3	8. Where a pipeline company receives a copy of an application for leave that has been filed with the Board, the pipeline company shall, within 10 working days after receiving the copy of the application, send to the Board its comments, if any, regarding the safety of the proposed facility or excavation in respect of the pipeline.		AB is LOWER then CAN as AB (in the Act and Regs) does not indicate how the Licensee proceeds when approval or notification was made to the Board.
24	National Energy Board Pipeline Crossing Regulations, Part II SOR/88-529	Section 5, Pg 2	5. (1) Every pipeline company shall develop detailed guidelines setting out the technical and other information to be included in requests for permission referred to in paragraph 4(b) or 6(b) of the National Energy Board Pipeline Crossing Regulations, Part I, and shall make those guidelines public. (2) The guidelines referred to in subsection (1) shall be submitted to the Board for approval prior to release to the public.	The pipeline company must develop guidelines for information to be included in requests for permission, submit to the Board for approval, and then make the guidelines public.	AB is LOWER than CAN as CAN requires a detailed guidelines be developed for information to be included in requests for permission, whereas AB lists a few things you must notify the licensee of.
25	National Energy Board Pipeline Crossing Regulations, Part II SOR/88-529	Section 6, Pg 3	6. (1) Where a pipeline company receives a request for permission, pursuant to paragraph 4(b) or 6(b) of the National Energy Board Pipeline Crossing Regulations, Part I, in accordance with the guidelines referred to in section 5, the pipeline company shall, within ten working days after receiving the request, inform the facility owner or excavator (a) whether permission has been granted; and (b) where permission has been refused, of the reasons for the refusal. (2) Where permission is granted pursuant to subsection (1), unless the pipeline company and the facility owner or excavator agree otherwise, the permission lapses if the construction or installation of the facility or the excavation is not completed within two years after the date the permission was granted.		AB is LOWER than CAN as AB (in the Act and regulations) does not specify timing or details related to permission, only notification

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26	Excavation and Construction Near Pipelines	Pg. 3	How to Obtain Permission from the Pipeline Company? Ask the pipeline company for a copy of their technical crossing guidelines. These guidelines set out the information you need to include in your application to the pipeline company. Prepare your request for permission following those guidelines. .... Within ten working days of receiving your request, the pipeline company must give you its permission or provide reasons for denying or delaying its permission. If permission is denied or delayed, you may apply to the NEB for a review of your request. If you decide to change the design, location, or type of facilities to be installed after the pipeline company gives its permission, the pipeline company must agree to the changes before you start your work.		
27	National Energy Board Pipeline Crossing Regulations, Part II SOR/88-529	Section 9, Pg 3	9. (1) Subject to subsection (2), when a pipeline company receives a request from a facility owner or an excavator to locate its pipes, the pipeline company shall, within three working days after the date of the request, or any longer period agreed to by the pipeline company and the facility owner or excavator (a) inform the facility owner or excavator, in writing, of any special safety practices to be followed while working in the vicinity of its pipes; (b) mark the location of its pipes in the vicinity of the proposed facility or excavation at maximum intervals of 10 m along each pipe using stakes that are clearly visible and distinct from any other stakes or markings that may be in the vicinity of the proposed facility or excavation; and (c) explain the significance of the stakes to the satisfaction of the facility owner or excavator. (2) Where ground conditions preclude the placing of the stakes referred to in subsection (1), paint or other suitable methods of marking may be substituted if the paint or marking is (a) clearly visible; (b) distinct from all other markings in the vicinity of the proposed facility or excavation; and (c) compatible with any local standard colour codes used for marking buried pipe.		AB is slightly HIGHER than CAN as AB requires marking to be completed withing a shorter time frame, 2 days, while CAN allows 3 days. AB is LOWER than CAN as CAN requires pipeline company to notify person of any safety requirments.

	T	U	V	W	X
28	National Energy Board Pipeline Crossing Regulations, Part I SOR/88-528	Section 9, Pg 8	9. When a pipeline company receives a request from a facility owner or an excavator to locate its pipes, the pipeline company may designate an area situated in the vicinity of the proposed facility or excavation, which may extend beyond 30 m from the pipeline, as a restricted area in which no excavation may be performed until the pipes are located and marked by the pipeline company or the expiry of three working days after the date of the request, whichever occurs first, unless the pipeline company and the facility owner or excavator have agreed on an extension of time for the pipeline company to locate and mark the pipes.		AB is LOWER than CAN in that CAN can temporarily extend the 30 metre restricted area to a greater distance.
29	Excavation and Construction Near Pipelines	Pg. 4	Is There a Time Limit? In general, the pipeline company's permission will lapse if all work is not completed within two years of the date that permission was given. However, this time limit may be changed if you and the pipeline company agree. As well, the pipeline company or the NEB may suspend the permission given by the pipeline company if unsafe construction practices are used.		
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32	Excavation and Construction Near Pipelines	Pg. 5, Step 1 & 2	Your Field Responsibilities Once the pipeline company has given its permission, there are four steps you must follow to comply with the regulations. 1. Notify the Company You must give the pipeline company three working-days notice before starting any work (except in the case of emergencies) and 24 hours notice before backfilling over the pipe. ..... 2. Observe the Temporary Restricted Area The temporary restricted area may be established by a pipeline company field representative. During the three day period that the restricted area is in existence, no mechanical excavation in the restricted area is permitted without the prior consent and supervision of an authorized company field representative. Before you start work, be certain that you have confirmed with the representative that all the company's pipes in the construction area have been staked by the representative and that you understand the meaning of the various stakes. A misunderstanding could cause you to damage a pipe, endangering your own life and that of others. The temporary restricted area differs from and should not be confused with the permanent 30 metre (100 foot) safety zone located on either side of the right of way.		AB EXCEEDS CAN as AB does not allow mechanical excavation within 5 metres of the pipe unless it has been exposed, whereas in CAN it is within 3 metres; AB does not allow mechanical excavation within 600 millimetres in any direction, whereas CAN only specifies no excavation less than 600 millimetres above.
33		Pg. 5, Step 3 & 4	Your Field Responsibilities Once the pipeline company has given its permission, there are four steps you must follow to comply with the regulations. .... 3. Follow the Rules for Excavation Within Three Metres of the Pipe Excavation using power-operated equipment is not permitted within three metres (10 feet) of the pipe unless: i.the pipe has been exposed by hand at the point of crossing or, ◦where the excavation runs parallel to the pipe, the pipe has been exposed at sufficient intervals to confirm its location or, ◦the pipeline company has informed the excavator that it has confirmed the location of the pipe by probing. ii.where the excavation crosses a pipe, the pipeline company has informed the excavator that it has confirmed the location of the pipe by probing and the pipe is at least six tenths of a metre (2 feet) deeper than the proposed excavation. iii.where ground conditions render exposure of the pipe by hand impractical, the pipeline company has agreed that the excavation may be performed safely to within one metre (3 feet) of the pipe under the direct supervision of the pipeline company. When boring directionally or using explosives, you must meet the pipeline company's conditions. At no time are you allowed to move or alter the pipe or its fittings, or in any other way interfere with the pipe without the written consent of the pipeline company, and then only if the work is done under its direct supervision. 4. Comply with the Pipeline Company's Conditions The pipeline company may have made its permission conditional on meeting certain requirements. If you accept the company's conditions, you must comply with them, as well as with the instructions of any authorized pipeline company field representative regarding procedures when working near the right of way.		AB is COMPARABLE to CAN as CAN requires supervision within 1 metre if it has not been exposed, and AB is within 600 millimetres after exposure. AB is LOWER than CAN as CAN specifies the person cannot move/alter the pipeline in anyway; the person must comply with the company's conditions and the representative's instructions.

	T	U	V	W	X
34	Excavation and Construction Near Pipelines	Section 10, Pg 4	10. The pipeline company shall (a) carry out such inspections as are necessary to ensure the continued safety of the pipeline during the period of excavation in the vicinity of a pipe and backfilling over a pipe; (b) inspect all exposed pipe prior to backfilling to ensure that no damage to a pipe has occurred; (c) in respect of the inspections referred to in paragraphs (a) and (b), maintain a record of all findings and observations; and (d) include in the record referred to in paragraph (c) the following information: (i) the name of the person conducting the inspection, (ii) the date and time of the inspection, and (iii) any field observations relating to (A) where a pipe was exposed during the construction or installation of a facility or during an excavation, the clearance between the pipe and the facility and the condition of the pipe at the time of backfilling over the pipe, (B) whether the facility owner or excavator has met the circumstances and conditions set out in the National Energy Board Pipeline Crossing Regulations, Part I, (C) the method of excavation, and (D) any unusual events during the construction or installation of the facility or during the excavation that may have had an effect on the safety or integrity of the pipeline.		AB is EQUAL to CAN as both require inspecton to ensure safety, and prior to backfilling; AB EXCEEDS CAN as while both require records of inspections to be kept, CAN details the contents of the records. AB is LOWER than CAN in that records need to be kept for 2 years in AB, and for the useful life of the pipeline in CAN.
35	National Energy Board Pipeline Crossing Regulations, Part II SOR/88-529	Section 11, Pg 5	11. (1) The pipeline company shall maintain records of all construction or installation of facilities and of all excavations for the useful life of the pipeline. (2) The records referred to in subsection (1) shall include, for each facility or excavation, as the case may be, (a) the name and address of the facility owner and excavator; (b) the nature and location of the facility or excavation; (c) the dates of commencement and termination of the construction or installation of the facility or of the excavation; (d) a description of the facility, submitted by the facility owner with the request for permission; (e) a copy of the pipeline company's written permission to the facility owner or excavator or an indication that leave of the Board was granted; (f) a copy of every inspection record maintained pursuant to paragraph 10(c); (g) a statement whether the facility owner or excavator has met the circumstances and conditions set out in the National Energy Board Pipeline Crossing Regulations, Part I; and (h) the details of the abandonment, removal or alteration of any facility.		AB is LOWER then CAN in that CAN requires records of constrction of facilities and excavations be kept for the useful life of the pipeline. AB (in the Act and regulations) does not specify this.

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36	National Energy Board Pipeline Crossing Regulations, Part II SOR/88-529	Section 12, Pg 6	12. (1) On the request of the Board, the pipeline company shall provide the Board with a list of every permission granted pursuant to the National Energy Board Pipeline Crossing Regulations, Part I. (2) The list referred to in subsection (1) shall include the information referred to in paragraphs 11(2)(a) to (c).		AB is LOWER then CAN in that CAN requires a list of permissions given be provided to the Board upon request. AB (in the Act and regulations) does not specify this.
37	National Energy Board Pipeline	Pg. 7	Safety Checklist …..		AB does NOT PROVIDE a safety checklist for ground disturbances.
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41					Signs and markers not discussed.

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47					AB is HIGHER than CAN in that (in the act and regulations) CAN does not discuss management of changes to surroundings.

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53	Excavation and Construction Near Pipelines	Pg. 10	Provincial One Call Centres. There may be buried utilities in the ground such as: electrical cables, high pressure gas lines, television cables, water lines, oil lines, etc. It is therefore important to know what is in the ground in order to dig safely to protect you, the public and the environment. Canada currently has One Call centres in five provinces. Although not a requirement, many pipeline companies under the NEB jurisdiction are members.		AB is HIGHER than CAN as CAN does not require companies to be a member of the provinical one call centres.

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58	National Energy Board Act	Part V, Section 112(2), pg 80	112 (2) Subject to subsection (5), no person shall operate a vehicle or mobile equipment across a pipeline unless leave is first obtained from the company or the vehicle or mobile equipment is operated within the travelled portion of a highway or public road.		AB is EQUAL to CAN in intent, although AB allows certain types of vehicles to cross without permission.

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61					AB is HIGHER than CAN in that CAN (in the Act and regulations) does not require maintaining of cover, or considering cover when making a substance change.
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3	**Source**		**DIRECT QUOTE (Level 1)**
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18	Title 49 - US Code - Chapter 601 - Safety	Section 60114 (a), Pg. 23	(a) Minimum Requirements.— The Secretary of Transportation shall prescribe regulations providing minimum requirements for establishing and operating a one-call notification system for a State to adopt that will notify an operator of a pipeline facility of activity in the vicinity of the facility that could threaten the safety of the facility. The regulations shall include the following: .... (2) a requirement that a person, including a government employee or contractor, intending to engage in an activity the Secretary decides could cause physical damage to an underground facility must contact the appropriate system to establish if there are underground facilities present in the area of the intended activity. .... (6) a requirement about the information to be provided by a person contacting the system under clause (2) of this subsection. (7) a requirement for the response of the operator of the system and of the facility after they are contacted by an individual under this subsection. ...

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20	Title 49 - US Code - Chapter 601 - Safety	Section 60114 (b), Pg. 24	(b) Marking Facilities.— On notification by an operator of a damage prevention program or by a person planning to carry out demolition, excavation, tunneling, or construction in the vicinity of a pipeline facility, the operator of the facility shall mark accurately, in a reasonable and timely way, the location of the pipeline facilities in the vicinity of the demolition, excavation, tunneling, or construction.

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32	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.935(b)(1)(I,ii), pg 492	192.935 .... (b) Third party damage and outside force damage— (1) Third party damage. An operator must enhance its damage prevention program, as required under § 192.614 of this part, with respect to a covered segment to prevent and minimize the consequences of a release due to third party damage. Enhanced measures to an existing damage prevention program include, at a minimum— (i) Using qualified personnel (see § 192.915) for work an operator is conducting that could adversely affect the integrity of a covered segment, such as marking, locating, and direct supervision of known excavation work. (ii) Collecting in a central database information that is location specific on excavation damage that occurs in covered and non covered segments in the transmission system and the root cause analysis to support identification of targeted additional preventative and mitigative measures in the high consequence areas. This information must include recognized damage that is not required to be reported as an incident under part 191. ...
33	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart I, 192.459, pg 444	192.459 External corrosion control: Examination of buried pipeline when exposed. Whenever an operator has knowledge that any portion of a buried pipeline is exposed, the exposed portion must be examined for evidence of external corrosion if the pipe is bare, or if the coating is deteriorated. If external corrosion requiring remedial action under §§ 192.483 through 192.489 is found, the operator shall investigate circumferentially and longitudinally beyond the exposed portion (by visual examination, indirect method, or both) to determine whether additional corrosion requiring remedial action exists in the vicinity of the exposed portion.

	Y	Z	AA
34	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.569, pg 599	195.569 Do I have to examine exposed portions of buried pipelines? Whenever you have knowledge that any portion of a buried pipeline is exposed, you must examine the exposed portion for evidence of external corrosion if the pipe is bare, or if the coating is deteriorated. If you find external corrosion requiring corrective action under § 195.585, you must investigate circumferentially and longitudinally beyond the exposed portion (by visual examination, indirect method, or both) to determine whether additional corrosion requiring remedial action exists in the vicinity of the exposed portion.
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38	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.935(b)(1)(iv), pg 492	192.935 .... (b) Third party damage and outside force damage— (1) Third party damage. An operator must enhance its damage prevention program, as required under § 192.614 of this part, with respect to a covered segment to prevent and minimize the consequences of a release due to third party damage. Enhanced measures to an existing damage prevention program include, at a minimum— ....(iv) Monitoring of excavations conducted on covered pipeline segments by pipeline personnel. If an operator finds physical evidence of encroachment involving excavation that the operator did not monitor near a covered segment, an operator must either excavate the area near the encroachment or conduct an above ground survey using methods defined in NACE SP0502–2008 (incorporated by reference, see § 192.7). An operator must excavate, and remediate, in accordance with ANSI/ASME B31.8S and § 192.933 any indication of coating holidays or discontinuity warranting direct examination. ....

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41	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.707, pg 470	192.707 Line markers for mains and transmission lines. (a) Buried pipelines. Except as provided in paragraph (b) of this section, a line marker must be placed and maintained as close as practical over each buried main and transmission line: (1) At each crossing of a public road and railroad; and (2) Wherever necessary to identify the location of the transmission line or main to reduce the possibility of damage or interference. (b) Exceptions for buried pipelines. Line markers are not required for the following pipelines: (1) Mains and transmission lines located offshore, or at crossings of or under waterways and other bodies of water. (2) Mains in Class 3 or Class 4 locations where a damage prevention program is in effect under § 192.614. (3) Transmission lines in Class 3 or 4 locations until March 20, 1996. (4) Transmission lines in Class 3 or 4 locations where placement of a line marker is impractical. (c) Pipelines aboveground. Line markers must be placed and maintained along each section of a main and transmission line that is located aboveground in an area accessible to the public. (d) Marker warning. The following must be written legibly on a background of sharply contrasting color on each line marker: (1) The word ‘‘Warning,’’ ‘‘Caution,’’ or ‘‘Danger’’ followed by the words ‘‘Gas (or name of gas transported) Pipeline’’ all of which, except for markers in heavily developed urban areas, must be in letters at least 1 inch (25 millimeters) high with 1⁄4 inch (6.4 millimeters) stroke. (2) The name of the operator and the telephone number (including area code) where the operator can be reached at all times.

	Y	Z	AA
42	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.410, pg 582	195.410 Line markers. (a) Except as provided in paragraph (b) of this section, each operator shall place and maintain line markers over each buried pipeline in accordance with the following: (1) Markers must be located at each public road crossing, at each railroad crossing, and in sufficient number along the remainder of each buried line so that its location is accurately known. (2) The marker must state at least the following on a background of sharply contrasting color: (i) The word ''Warning,'' ''Caution,'' or ''Danger'' followed by the words ''Petroleum (or the name of the hazardous liquid transported) Pipeline'', or ''Carbon Dioxide Pipeline,'' all of which, except for markers in heavily developed urban areas, must be in letters at least 1 inch (25 millimeters) high with an approximate stroke of 1⁄4 inch (6.4 millimeters). (ii) The name of the operator and a telephone number (including area code) where the operator can be reached at all times. (b) Line markers are not required for buried pipelines located— ..... (2) In heavily developed urban areas such as downtown business centers where— (i) The placement of markers is impractical and would not serve the purpose for which markers are intended; and (ii) The local government maintains current substructure records. (c) Each operator shall provide line marking at locations where the line is above ground in areas that are accessible to the public.
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47	and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.935(b)(2), pg 492	192.935 .... (b) Third party damage and outside force damage— (2) Outside force damage. If an operator determines that outside force (e.g., earth movement, floods, unstable suspension bridge) is a threat to the integrity of a covered segment, the operator must take measures to minimize the consequences to the covered segment from outside force damage. These measures include, but are not limited to, increasing the frequency of aerial, foot or other methods of patrols, adding external protection, reducing external stress, and relocating the line. ....

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51	Natural and Other Gas by Pipeline: Minimum Federal	Subpart O, 192.935(b)(2), pg 492	192.935 .... (b) Third party damage and outside force damage— (2) Outside force damage. If an operator determines that outside force (e.g., earth movement, floods, unstable suspension bridge) is a threat to the integrity of a covered segment, the operator must take measures to minimize the consequences to the covered segment from outside force damage. These measures include, but are not limited to, increasing the frequency of aerial, foot or other methods of patrols, adding external protection, reducing external stress, and relocating the line. ....
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53	Title 49 - US Code - Chapter 601 - Safety	Section 60114 (a), Pg. 23	(a) Minimum Requirements.— The Secretary of Transportation shall prescribe regulations providing minimum requirements for establishing and operating a one-call notification system for a State to adopt that will notify an operator of a pipeline facility of activity in the vicinity of the facility that could threaten the safety of the facility. The regulations shall include the following: (1) a requirement that the system apply to all areas of the State containing underground pipeline facilities. .... (3) a requirement that all operators of underground pipeline facilities participate in an appropriate one-call notification system. (4) qualifications for an operator of a facility, a private contractor, or a State or local authority to operate a system. (5) procedures for advertisement and notice of the availability of a system. ....

	Y	Z	AA
54	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (c), Pg. 5	(B) (i) Not later than June 1, 1998, the Secretary shall survey and assess the public education programs under section 60116 and the public safety programs under section 60102 (c) and determine their effectiveness and applicability as components of a model program. In particular, the survey shall include the methods by which operators notify residents of the location of the facility and its right of way, public information regarding existing One-Call programs, and appropriate procedures to be followed by residents of affected municipalities in the event of accidents involving interstate gas pipeline facilities.
55	Title 49 - US Code - Chapter 601 - Safety	Section 60116 (a), Pg. 26	(a) In General.— Each owner or operator of a gas or hazardous liquid pipeline facility shall carry out a continuing program to educate the public on the use of a one-call notification system prior to excavation and other damage prevention activities, the possible hazards associated with unintended releases from the pipeline facility, the physical indications that such a release may have occurred, what steps should be taken for public safety in the event of a pipeline release, and how to report such an event.
56	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.935(b)(1)(iii), pg 492	192.935 .... (b) Third party damage and outside force damage— (1) Third party damage. An operator must enhance its damage prevention program, as required under § 192.614 of this part, with respect to a covered segment to prevent and minimize the consequences of a release due to third party damage. Enhanced measures to an existing damage prevention program include, at a minimum— ....(iii) Participating in one-call systems in locations where covered segments are present. ...
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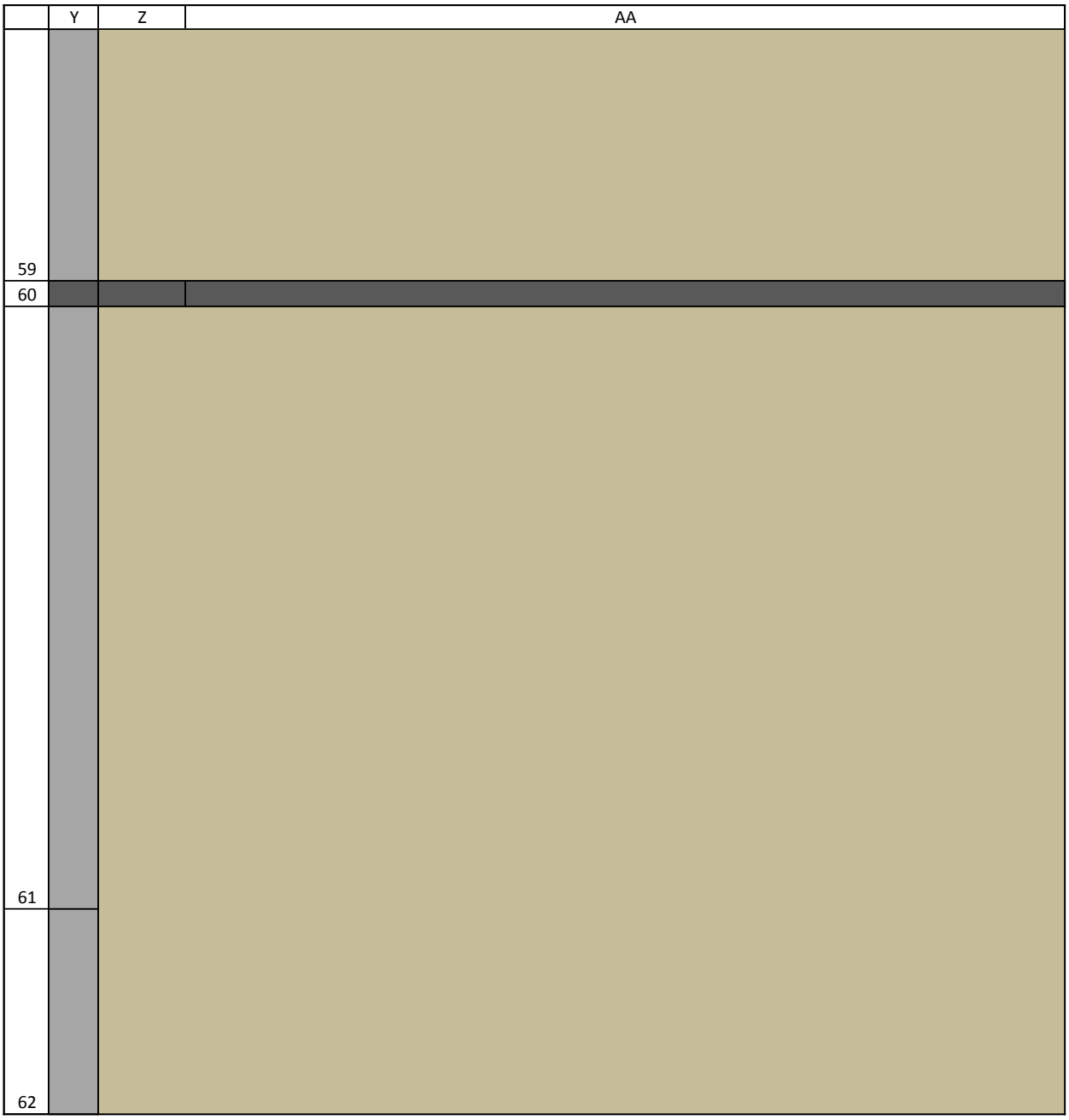
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32	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 080 (g), pg 24	(g) The owner or operator shall ensure that, if a piping segment of a buried facility oil piping installation is exposed for any reason, the segment is carefully examined, for damaged coating or corroded piping in accordance with Section 9.2.6 of Piping Inspection Code, Inspection, Repair, Alteration, and Rerating of In-service Piping Systems (API 570), adopted by reference in (j) of this section, if active corrosion is found during that examination, (1) the owner or operator shall implement actions for control of future corrosion; and (2) significant repairs or replacements must meet the requirements of (c) and (e) of this section.
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41	Control	Article 1, Section 047 (e), pg 9	(e) Line markers shall be installed no later than December 30, 2007 and maintained over each onshore flow line at each road crossing and at one-mile intervals along the remainder of the pipe to identify and, for buried pipe, properly locate each flow line.

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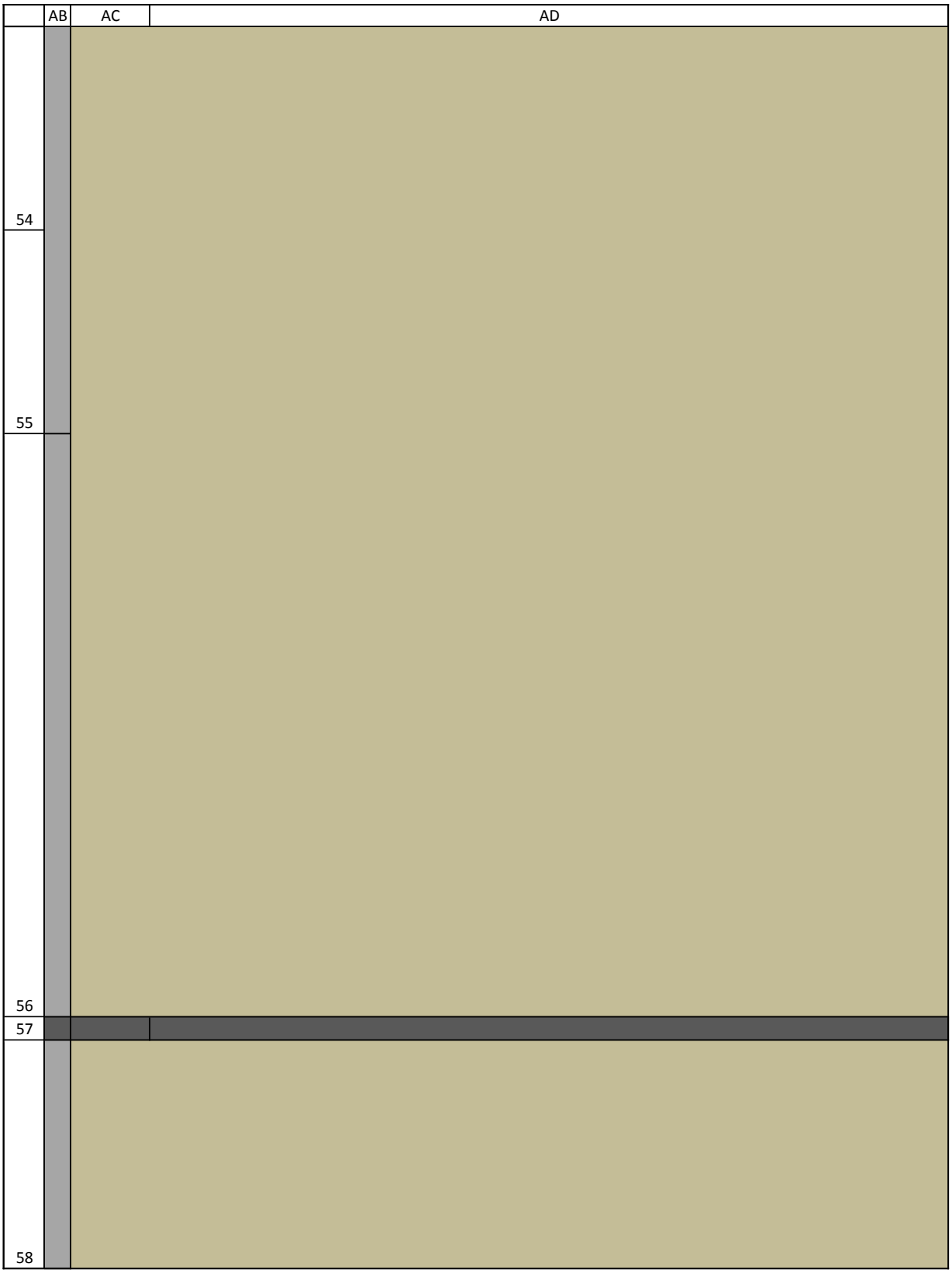
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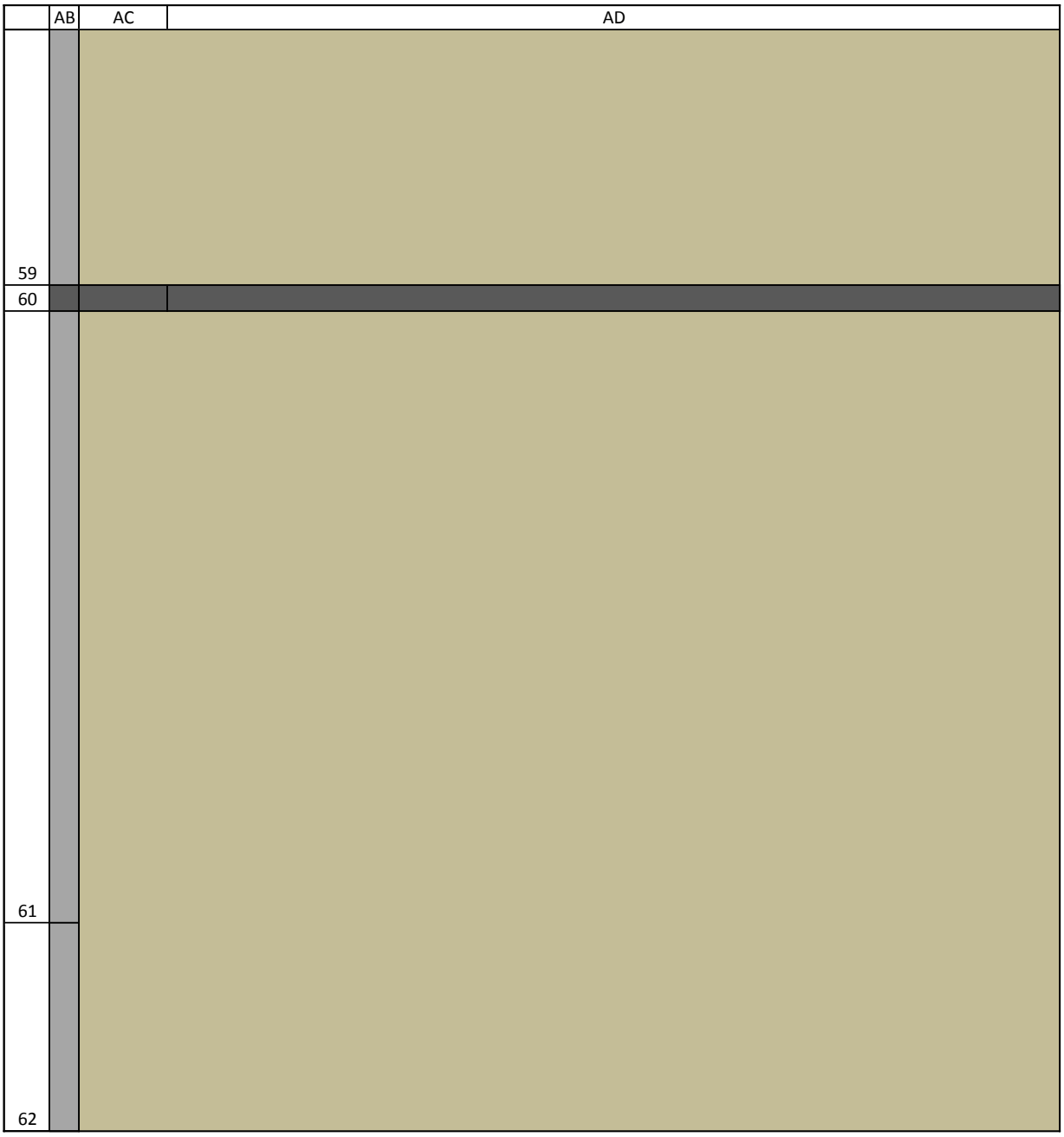
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18	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1(a), pg 46	7.5.1 Controlling activities near pipelines The Licensee shall bring to the attention of relevant parties the following in relation to activities near pipelines: (a) The minimum notice of intended activities near a pipeline to be given to the Licensee or operators so that arrangements can be made to have a Licensee's representative on-site during the work. Typically this is not less than 48 h.

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19	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1(b), pg 46	7.5.1 Controlling activities near pipelines The Licensee shall bring to the attention of relevant parties the following in relation to activities near pipelines: ...(b)Where third-party works are to be conducted in the proximity of a pipeline and the integrity of the pipeline is potentially under threat, the need for the site to be inspected and, where determined necessary, a work plan specified.....
20	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.4.3, pg 46	7.4.3 'Dial Before You Dig' or 'One Call' services ... NOTE: Third parties excavating in areas for which 'Dial Before You Dig' or 'One Call' services are available should be encouraged to seek from that service information about pipeline assets, at least 48 h prior to excavating.

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21	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.3, pg 47	7.5.3 Power and telephone poles, fencing, seismic and land disturbance activities The Licensee should ensure adequate liaison so that parties undertaking such works adjacent to the pipeline advise the Licensee not less than 48 h prior to commencement. This allows marking out the prohibited area and enables the Licensee to supervise, where appropriate, to prevent damage to the pipeline. The Licensee shall take all reasonable steps to ensure that the following activities are appropriately controlled: (a) The placement of a new or replacement of power and communications services poles and fencing across or along the easement or pipeline route. NOTE: Holes should only to be drilled and poles or posts placed after the Licensee has marked the exact pipeline location and has decided if supervision of the activity is required. (b) Land disturbance activities deeper than 300 mm, such as deep ripping, and the installation of drainage systems on the pipeline easement, or where no easement exists, a minimum of 3 m (but preferably 6 m) each side of the pipeline. (c) Any seismic surveys and associated blasting near the pipeline, or crossing activities need to be designed to ensure that these activities do not affect the pipeline.
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30	liquid petroleum, Part 3: Operation and maintenance	Section 7.5.8, pg 48	7 .5.8 Explosives The Licensee shall ensure adequate liaison with any person intending to use explosives near the pipeline. Any use of explosives in the vicinity of the pipeline shall be fully evaluated prior to granting approval.
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32	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1(c), pg 46	7.5.1 Controlling activities near pipelines The Licensee shall bring to the attention of relevant parties the following in relation to activities near pipelines: …(c) The need for a representative of the Licensee to be present during excavation near a pipeline, to minimize the risk of pipeline damage. .....
33	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1(d), pg 46	7.5.1 Controlling activities near pipelines The Licensee shall bring to the attention of relevant parties the following in relation to activities near pipelines: …(d) No mechanical equipment to be used for excavation within 1 m of the pipeline in any radial direction, even after the pipeline location has been proven, except when approved by, and under explicit 'on-site ' direction from, the Licensee's inspector. Under no circumstances is mechanical equipment other than hand-held and operated equipment to be used closer than 0.3 m to the pipeline. Exposure of the pipeline to be performed by hand digging, to minimize the risk of pipeline or coating damage. ...

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34	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1(g), pg 46	7.5.1 Controlling activities near pipelines The Licensee shall bring to the attention of relevant parties the following in relation to activities near pipelines: …(g) Backfill requirements around the pipeline (typically no less than 150 mm and m accordance with AS 2885 .1). .....
35	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1, pg 46	7.5.1 Controlling activities near pipelines … Whenever the pipeline is exposed, a record should be kept of location, coating condition and any other pertinent information that can be used for integrity assessments

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47	and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.5, pg 48	7.5.5 Encroachment/location class Any change of land use near the pipeline requires the Licensee to review the pipeline's safety management study to assess the impact and advise the developer of the impact identified as a result of the change in land use. Additional mitigation measures may be required to meet the requirements of AS 2 8 8 5 .1, particularly where land use changes become high consequence areas and more stringent control requirements arise. The Licensee shall establish the necessary management procedures for all known and proposed land use changes around the pipeline and be ready to implement changes for future planned land use. When a known proposed development is identified, the Licensee shall undertake a safety management study and confirm the pipeline integrity, both its structural strength and coating condition, to ensure continuous safe and reliable pipeline operation for the proposed new operating environment.

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48	Pipelines-Gas and liquid petroleum, Part 3:	Section 7.5.2, pg 47	7.5.2 Placement of material on or near the pipeline The Licensee shall take all reasonable steps to ensure material is not placed on or near the pipeline without approval. Inappropriate placement of material on or near the pipeline can result in unacceptable soil loading, restricted access to the pipeline, changes in the pipe environment (corrosion) and increase to the risk of cave-in during subsequent excavation.
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53	Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.4.3, pg 46	7.4.3 'Dial Before You Dig' or 'One Call' services Licensees shall register and maintain the information about their assets with 'Dial Before You Dig' or 'One Call ' services, where available, to provide third parties that are intending to work near the pipeline the location of pipeline assets, prior to th e work activity.

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58	and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1(f), pg 46	7.5.1 Controlling activities near pipelines The Licensee shall bring to the attention of relevant parties the following in relation to activities near pipelines: … (f) The… maximum vehicle load limits for the protection of the pipeline. .....

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59	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.6, pg 48	7.5.6 Vehicle load limits Loads imposed by vehicles on the pipeline shall be assessed and managed if they are considered to exceed the design conditions of the pipeline at any specific location. The induced pipe stress shall be confirmed to comply with the total pipeline stress and strain limits, as specified in AS 2885.1. Where the pipeline stress due to external loads is assessed to exceed the specified limits, appropriate load restrictions and/or stress limitation measures shall be provided to ensure the pipeline's safe and reliable operation.
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61	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.1(f), pg 46	7.5.1 Controlling activities near pipelines The Licensee shall bring to the attention of relevant parties the following in relation to activities near pipelines: … (f) The minimum cover …. for the protection of the pipeline. .....
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3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**
4	**INSPECT / MONITOR/ REVIEW**			
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21	**HAZARD/IMPERFECTION IDENTIFICATION & RISK ASSESSMENT**			
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32	**EXTERNAL INSPECTIONS**			

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33	Pipeline Regulation	Part 4, Section 43, pg 24	Right of way inspection 43(1) The licensee of a pipeline that crosses water or unstable ground shall at least once annually inspect the pipeline right of way to assess (a) the surface conditions on and adjacent to the right of way, (b) indications of any leak in the pipeline, (c) any construction activity performed by others, (d) any encroachment or development near the pipeline right of way, or (e) any other condition affecting the operation of the pipeline. (2) The licensee of a pipeline other than one referred to in subsection (1) shall inspect the pipeline right of way in accordance with that subsection at least once annually or in accordance with the inspection intervals determined in the integrity management component of the licensee's manual or manuals referred to in section 7. (3) The licensee shall conduct the inspections required under subsections (1) and (2) (a) at times of the year judged by the licensee to be the most appropriate to achieve a satisfactory inspection, and (b) so as to reasonably minimize disturbance or damage to affected surface property.	
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36	Pipeline Regulation	Part 4, Section 44, pg 25	44(1) Notwithstanding the frequency of inspections required by section 43, a licensee shall carry out additional inspections in accordance with section 43(1)(a) to (e) as follows: (a) monthly for any CSA Z662 Class 1 LVP product gathering segments; (b) once every 2 weeks for any Class 1 LVP product transmission segments, Class 1 HVP product segments or Class 2 segments conveying gas containing more than 10 moles of hydrogen sulphide gas per kilomole of natural gas; (c) once every week for any Class 2, 3 or 4 LVP product gathering or transmission segments, Class 2, 3 or 4 HVP product segments, or Class 3 or 4 segments conveying gas containing more than 10 moles of hydrogen sulphide gas per kilomole of natural gas. (2) For the purposes of this section and section 45, "LVP product" does not include multiphase fluids or oilfield water.	
37	**OPERATION & MAINTENANCE**			

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38	Pipeline Regulation	Part 1, Section 7(1), 7(3), pg 12	7(1) A licensee shall prepare and maintain a manual or manuals containing procedures for pipeline operation, maintenance .... and shall on request file a copy of each manual with the Board for review. .... 7(3) A licensee shall (a) update the manuals referred to in subsection (1) as necessary to ensure that their contents are correct, and (b) be able to demonstrate that the procedures contained in the manuals are being implemented.	
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54	**CHANGE MANAGEMENT**			
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58	Pipeline Act	Part 4, Section 17, pg 15	17(1) No pipeline for which a licence has been granted may be used for the transmission of any substance other than the substance authorized by the licence.	Only the licensed substance can be transmitted.
59	Pipeline Regulation	Part 7, Section 74, Pg 36	74 Unless otherwise authorized by the Board, an application for approval to convert a pipeline to convey a substance other than the substance authorized by the licence ….. must be in accordance with the requirements of Directive 056.	
60	Pipeline Regulation	Part 7, Section 75, Pg 37	75 The Board may establish testing requirements it considers necessary for the approval of a change in substance conveyed …..	
61	Energy Development Applications and	Dir. 056, Section 6.7, pg 125	6.7 Licence Amendments 11) Applicants must follow the requirements set out in Directive 026 when making an application to amend an oil effluent pipeline with greater than 10 mol/kmol H2S content. 12) The licensee must submit a pipeline licence amendment application for ...b) H2S changes, ...	
62	Energy Development Applications and Schedules	Dir. 056, Section 6.9.20, pg 138	6.9.24 Injecting Natural Gas Containing H2S into a Producing Reservoir When a producing reservoir has an approved enhanced recovery scheme that allows the injection of natural gas containing H2S, the pipeline licensee must review the impact of the scheme operation on the pipeline materials and operating parameters. 59) The applicant must evaluate the potential for a) gas cap breakthrough, b) reclassification of existing pipeline systems due to an increase in H2S content, c) reclassification of producing wells as critical wells, and d) licence amendment applications to meet CSA sour service material requirements for the pipelines affected.	
63	Energy Development Applications and Schedules	Dir. 056, Section 6.9.19, pg 135	6.9.19 Liner Type ... A routine pipeline licence amendment can be filed for a liner removal by selecting “Other (specify)” as the licence amendment type. Notification is not mandatory for liner installations or removals (see Table 6.2).	Liner removal is a routine pipeline licence amendment. Notification is not mandatory.

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64	Energy Development Applications and Schedules	Dir. 056, Section 6.7.1, pg 126	6.7.1 Pipeline Applications—Checklist for Minimum Technical Requirements Additional technical evaluation should be considered when the following pipeline activities are proposed: .... liner installation, ... The Pipeline Applications Checklist for Minimum Technical Requirements, found on the Directive 056 Web page, should be used as a reference document.	The Pipeline Applications Checklist for Minimum Technical Requirements, should be used as a reference document for liner installation.
65	Energy Development Applications and Schedules	Dir. 056, Section 6.7, pg 125	6.7 Licence Amendments 12) The licensee must submit a pipeline licence amendment application for .... d) liner installation/removal, ...	The licensee must submit a pipeline licence amendment application for liner installation/removal.
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68	**MOP, MOP CHANGES, PRESSURE TESTING**			
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72	Pipeline Regulation	Part 3, Section 41, pg 24	42 The Board may require a pipeline to be retested if, in the opinion of the Board, it may be unsafe for the pipeline to continue to be operated at the licensed operating pressure.	The Board may order a pressure test be repeated if it feels the pipeline is unsafe at the licensed operating pressure.
73	Pipelines - Requirements and Reference Tools	Dir. 077, Part A, Section 6.1, pg 23	6.1....CSA Z662-11, Clauses 10.3.8 and 10.3.9, require that an engineering assessment be carried out before pressure testing an existing pipeline to determine that the pipeline can withstand the pressure.	
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75	Energy Development Applications and Schedules	Dir. 056, Section 6.9.17 (48)(a), pg 134	6.9.17 ... 48) When changing the substance, the applicant/licensee must consider the following and take appropriate mitigative actions to ensure continued compliance: a) pressure-testing requirements …	
76	Pipeline Regulation	Part 7, Section 74, Pg 36	74 Unless otherwise authorized by the Board, an application for approval ….. to provide for a change in the licensed maximum operating pressure of a pipeline must be in accordance with the requirements of Directive 056.	
77	Pipeline Regulation	Part 7, Section 75, Pg 37	75 The Board may establish testing requirements it considers necessary for the approval of a change in …. licensed maximum operating pressure.	
78	Energy Development Applications and Schedules	Dir. 056, Section 6.7, pg 125	6.7 Licence Amendments 12) The licensee must submit a pipeline licence amendment application for a) MOP changes, ...	
79	Energy Development Applications and Schedules	Dir. 056, Section 6.7.1, pg 126	6.7.1 Pipeline Applications—Checklist for Minimum Technical Requirements Additional technical evaluation should be considered when the following pipeline activities are proposed: .... MOP increase,..... . The Pipeline Applications Checklist for Minimum Technical Requirements, found on the Directive 056 Web page, should be used as a reference document.	
80	Energy Development Applications and Schedules	Dir. 056, Section 6.9.15, pg 134	6.9.15 Maximum Operating Pressure Increase 45) The applicant/licensee must determine if any of the following is affected by an increase in MOP and take the appropriate mitigative action to ensure continued compliance: a) testing requirements to confirm capability for the increased pressure b) overpressure protection on upstream and downstream pipelines c) pipeline class redesignation d) pipeline level reclassification e) potential setbacks f) partial pressure of H2S (Categories C and D only) g) material and standard suitability 46) If the applicant determines that the pipeline operation will change either the personal consultation and confirmation of nonobjection and/or the notification requirements, the applicant must initiate consultation and/or notification (see Table 6.2).	

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81	Energy Development Applications and Schedules	Dir. 056, Section 6.9.16, pg 134	6.9.16 Maximum Operating Pressure Decrease 47) The applicant/licensee must determine if any of the following is affected by a decrease in MOP and take the appropriate mitigative action to ensure continued compliance: a) pipeline integrity under the new MOP b) pressure compatibility with upstream and downstream pipelines c) pipeline level reclassification	
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83	**VALVES, DEVICES, SYSTEMS, CONTROLS**			
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85	Pipeline Regulation	Part 2, Section 13, pg 15	13(1) A licensee shall ensure that a pipeline conveying gas containing more than 10 moles of hydrogen sulphide gas per kilomole of natural gas, or any lesser hydrogen sulphide content that the Board stipulates in a particular case, is equipped with automatically actuated emergency shutdown devices or check valves. (2) A licensee shall conduct an engineering assessment to define the pipeline operating conditions and the closure parameters of the automatically actuated emergency shutdown devices referred to in subsection (1) that will ensure the release volume used in calculating the emergency planning zone in the event of a pipeline break is as low as reasonably practicable. (3) A licensee shall ensure that the automatically actuated emergency shutdown devices or check valves referred to in subsection (1) and (2) (a) isolate the pipeline into segments whose volumes are in accordance with those specified in the licence application, and (b) automatically close as defined by the engineering assessment required in subsection (2) if a pipeline break occurs. (4) A licensee shall ensure that the automatically actuated emergency shutdown device referred to in subsection (1) (a) closes on the failure of any control or operating component, (b) remains closed once the device has closed due to actuation or failure, and (c) requires on-site human intervention to reopen once it has closed unless it was closed due to a planned pipeline shutdown. (5) A licensee shall not allow the pipeline or the automatically actuated emergency shutdown devices to operate outside of the conditions defined within the engineering assessment conducted under subsection (2). (6) If the licensee determines that the pipeline or the automatically actuated emergency shutdown devices could be operating outside of the conditions defined by the engineering assessment conducted under subsection (2), the licensee shall shut in the pipeline until (a) the pipeline and the automatically actuated emergency shutdown devices can be operated within the defined conditions, or (b) the licensee completes an engineering assessment as specified in subsection (2) and revises the emergency planning zone, as required by Directive 071. (7) Unless otherwise authorized by the Board, a licensee shall maintain a record of the current engineering assessment conducted under subsection (2) and the actions taken under subsection (6) until the pipeline is abandoned. (8) The licensee shall submit a copy of the records required under subsection (7) to the Board on request.	A pipeline containing more than 10 moles of hydrogen sulphide gas per kilomole of natural gas, requires an automatically actuated emergency shutdown device (ESD) or check valves. The licensee will conduct an engineering assessment to define the pipeline operating conditions and closure parameters that will ensure the release volume used in calculating the emergency planning zone in the event of a pipeline break is as low as possible. Ensure the valves isolate the pipeline into segments whose volumes are in accordance with those specified in the licence application, and automatically close if a pipeline break occurs, or on the failure of any control or operating component, remains closed and requires on-site human intervention to reopen (unless due to a planned shutdown).
86	Pipeline Regulation	Part 4, Section 50, pg 26	50(1) A licensee shall conduct preventative maintenance, servicing and function testing of the automatically actuated emergency shutdown devices and check valves referred to in section 13 ..., including any associated sensors or operating systems. (2) A licensee shall conduct an annual inspection, assessment and test, with a maximum interval of 18 months between such activities, of the automatically actuated emergency shutdown devices and check valves referred to in section 13 ..., including any associated sensors or operating systems, to ensure that the devices are operating properly. (3) A licensee shall verify and document that the actual pipeline operating conditions and the automatically actuated emergency shutdown device closure parameters are as defined within the engineering assessment conducted under section 13. (4) A licensee shall maintain records of all such work under this section for a period of 2 years from the date the record is made. (5) A licensee shall submit a copy of the records required under this section to the Board on request.	A licensee will conduct preventative maintenance, servicing and function testing of the automatically actuated emergency shutdown devices and check valves, an annual inspection, assessment and test, with a maximum interval of 18 months, including any associated sensors or operating systems, to ensure that the devices are operating properly. Verify and document that the actual pipeline operating conditions and the automatically actuated emergency shutdown device closure parameters are as defined. Maintain records of all such work under this section for a period of two years, submit a copy of the records on request.

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90	Pipeline Regulation	Part 2, Section 22, pg 20	22(1) Unless otherwise authorized by the Board, a licensee shall design, operate and maintain its pipeline in accordance with the maximum operating pressure permitted in the licence. (2) If 2 or more pipelines are connected and their licensed maximum operating pressures differ by more than 5% of the lowest licensed maximum operating pressure, a pressure control system and overpressure protection must be installed in accordance with CSA Z662 to ensure that the pipeline with the lowest maximum operating pressure will not be subjected to a pressure greater than its licensed maximum operating pressure. (3) In addition to subsection (2), a licensee shall install a pressure control system and overpressure protection at any point in a pipeline where supply from any source makes it possible to increase the pressure in the pipeline above its licensed maximum operating pressure. (4) Unless otherwise authorized by the Board, the operating pressure of a pipeline at all points along the pipeline must not exceed the maximum operating pressure permitted in the licence. (5) Unless otherwise authorized by the Board, the maximum operating pressure of a section of a pipeline must be determined using the test pressure recorded or calculated at the highest point in the section.	

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91	Pipelines - Requirements and Reference Tools	Dir. 077, Part A, Section 3.3, pg 16	3.3 Interpretation At locations where the licensee of the pipeline and the licensee of the artificial lift equipment are different, it is the responsibility of the pipeline licensee to ensure protection of the pipeline from the artificial lift equipment.	A licensee is responsible for the protection of the pipeline if the licensee of the artificial lift equipment is different.
92	Pipelines - Requirements and Reference Tools	Dir. 077, Part A, Section 3.1.1, pg 15	3.1.1 CSA Requirements and Current Industry Practice Clause 4.18 of CSA Z662-07 and Section 22 of the Pipeline Regulation require pressure control and overpressure protection for pipelines where there is a source capable of overpressuring the pipelines. To protect the well sites and the associated gathering pipeline systems, the common industry practice is to use a back-pressure control valve (BPCV) located on a pressure vessel in the battery as pressure control for the pipeline, and to use a pressure switch located at the wellhead as overpressure protection that shuts down the artificial lift equipment at the well. However, the pipelines are not always provided with a dedicated pressure control and overpressure protection system, as required by CSA Z662-07. The ERCB does not consider this design to be meeting CSA requirements since, in many cases, the BPCV is not capable of providing pressure control, for example when the battery inlet emergency shutdown valve (ESDV) is closed during emergency or an upset situation, thus isolating the pipeline from the BPCV and nullifying the effect of dual protection as required by CSA Z662-07.	CSA Z662-07 and the Regulation both require pressure control/overpressure protection where it is possible to overpressure a pipeline. Industry practice is to use back pressure control valve (BPCV) on a pressure vessel in the battery as pressure control, and a pressure switch at the wellhead as overpressure protection to shut down the artificial lift equipment at the well. Pipelines do not always have dedicated pressure control/overpressure protection system, as required by CSA Z662-07. If the BPCV is isolated from the pipeline (ie/due to an emergency shutdown valve (ESDV)) dual protection as required by CSA Z662-07 is nullified.

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93	Pipelines - Requirements and Reference Tools	Dir. 077, Part A, Section 3.2, pg 15	3.2 Requirements 1) Where artificial lift equipment is capable of supplying pressure in excess of the pipeline maximum operating pressure either (a) or (b) is required: a) the licensee of the pipeline must i) have two independently operating overpressure protection devices designed to protect the pipeline from experiencing excess pressure; ii) ensure that the two overpressure protection devices will not allow the licensed maximum operating pressure of the pipeline to be exceeded by more than 10% or 35 kPa, whichever is greater, as described in CSA Z662-07; and iii) conduct inspections, assessments, and testing of the devices described in (a)(i) in accordance with CSA Z662-07, Clause 10.7.5.2; or b) the licensee of the pipeline must have i) a single overpressure protection device designed to protect the pipeline from experiencing excess pressure; ii) ensure that the single overpressure protection device will not allow the licensed maximum operating pressure of the pipeline to be exceeded by more than 10% or 35 kPa, whichever is greater, as described in CSA Z662-07; iii) a competent individual conducting monthly inspections, assessments, and testing on the single overpressure protection device; and iv) a certified instrumentation technician conduct annual inspections, assessments, and testing, with maximum interval of 18 months between such activities, on the single overpressure protection device to ensure that the monthly inspections, assessments, and testing are correctly conducted and that the device is not defective or nonfunctioning. 2) A defective or nonfunctioning overpressure protection device must be repaired or replaced before the pipeline licensee resumes operation of the pipeline. 3) For all overpressure protection devices, the pipeline licensee must a) maintain adequate inspection, assessment, and testing records for the overpressure protection device, and b) submit the records to the ERCB upon request. 4) Inspection, assessment, and testing records must document the information used to perform effective evaluation of the overpressure protection device; the results of the inspection, assessment, and testing; and the resolution of any issues regarding a defective or nonfunctioning device prior to the resumption of pipeline operations by the licensee.	Where artificial lift equipment could cause a pipeline MOP to be exceeded, the licensee must have two independent overpressure protection devices that will not allow the licensed MOP of the pipeline to be exceeded by more than 10 per cent or 35 kPa, and conduct inspections, assessments and testing of the devices, OR the licensee requires one overpressure protection device that will not allow the licensed MOP of the pipeline to be exceeded by more than 10 per cent or 35 kPa, and monthly inspections, assessments, and testing on the device; and annual inspections, assessments, and testing, (max interval 18 months) on the device to ensure that the monthly inspections, assessments, and testing are correctly conducted and that the device is not defective or nonfunctioning. Information, results and resolutions used to perform evaluations must be documented. Defective devices must be repaired or replaced before the pipeline licensee resumes operation. The licensee must maintain adequate inspection, assessment, and testing records for all overpressure protection devices, and submit the records upon request.
94	Pipeline Regulation	Part 2, Section 14, pg 16	14(1) If gas streams are blended for the purpose of maintaining a lower hydrogen sulphide content in the final blended stream, and any inlet stream conveys gas containing more than 10 moles of hydrogen sulphide gas per kilomole of natural gas, or any lesser hydrogen sulphide content that the Board stipulates in a particular case, the licensee shall ensure that there are 2 independent safety systems to prevent a greater hydrogen sulphide content in the blended stream than permitted in the licence. (2) A licensee shall ensure that one of the 2 independent safety systems referred to in subsection (1) provides, as a minimum, the process control to achieve the blend ratio and that the other system provides, as a minimum, monitoring and automatic shutdown.	If gas streams are blended to maintain a lower H2S content and one contains more than 10 moles of H2S gas per kilomole of natural gas, the licensee shall ensure that there are two independent safety systems with one providing the process control to achieve the blend ratio and the other monitoring and automatic shutdown.
95	Energy Development Applications and Schedules	Dir. 056, Section 6.9.27, pg 142	6.9.27 Blending of Products Product blending is defined as the combination of similar products with different H2S contents for the purpose of maintaining a lower H2S content in the blended stream. Blending a liquid stream with a gas stream is not permitted. 76) The applicant must ensure that the H2S content in the final blended stream does not exceed the licensed H2S content of the receiving pipeline. 77) The applicant must submit a nonroutine application and include a detailed description of the design for a) flow ratio control with or without automatic shutdown, and b) H2S monitoring (or flow ratio control) with automatic shutdown in accordance with the Pipeline Regulation, Section 14.	Two products with different H2S content are blended to maintain a lower H2S. Liquid/and gas cannot be blended. Licensed H2S content cannot be exceeded. Submit a nonroutine application and include a detailed description of the design for flow ratio control (with or without automatic shutdown), and H2S monitoring with automatic shutdown.
96	**MATERIAL BALANCE**			
97	Pipeline Regulation	Part 4, Section 48, pg 26	48 A licensee shall interpret material balance records in accordance with Appendix E of CSA Z662 to determine whether a leak trend is established.	
98	Pipeline Regulation	Part 4, Section 49, pg 26	49 A licensee who performs material balance calculations shall use sound engineering practices to derive measurement uncertainties and alarm tolerances.	
99	**LEAK DETECTION**			

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100	Pipeline Regulation	Part 2, Section 9(3), pg 13	9 (3) Except as otherwise specified by this Regulation, the minimum requirements for the ... leak detection of pipelines are set out in CSA Z662. (4) The leak detection requirements contained in Annex E of CSA Z662 are mandatory for liquid hydrocarbon pipelines.	
101	Energy Development Applications and Schedules	Dir. 056, Section 6.9.3, pg 128	6.9.3 Pipeline Leak Detection 23) The licensee must meet leak detection requirements for liquid hydrocarbon pipelines as described in Annex E of CSA Z662. CSA Z662, Clause 10, has requirements for leak detection for liquid hydrocarbon, gas, and oilfield water pipelines; however, the additional leak detection requirements contained in Annex E of CSA Z662 are mandatory only for liquid hydrocarbon pipelines. Refer to the Pipeline Regulation, Section 9.	Liquid Hydrocarbon pipeline must meet additional leak requirements of Annex E.

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	E	F	G	H	I
2	**BC**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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	E	F	G	H	I
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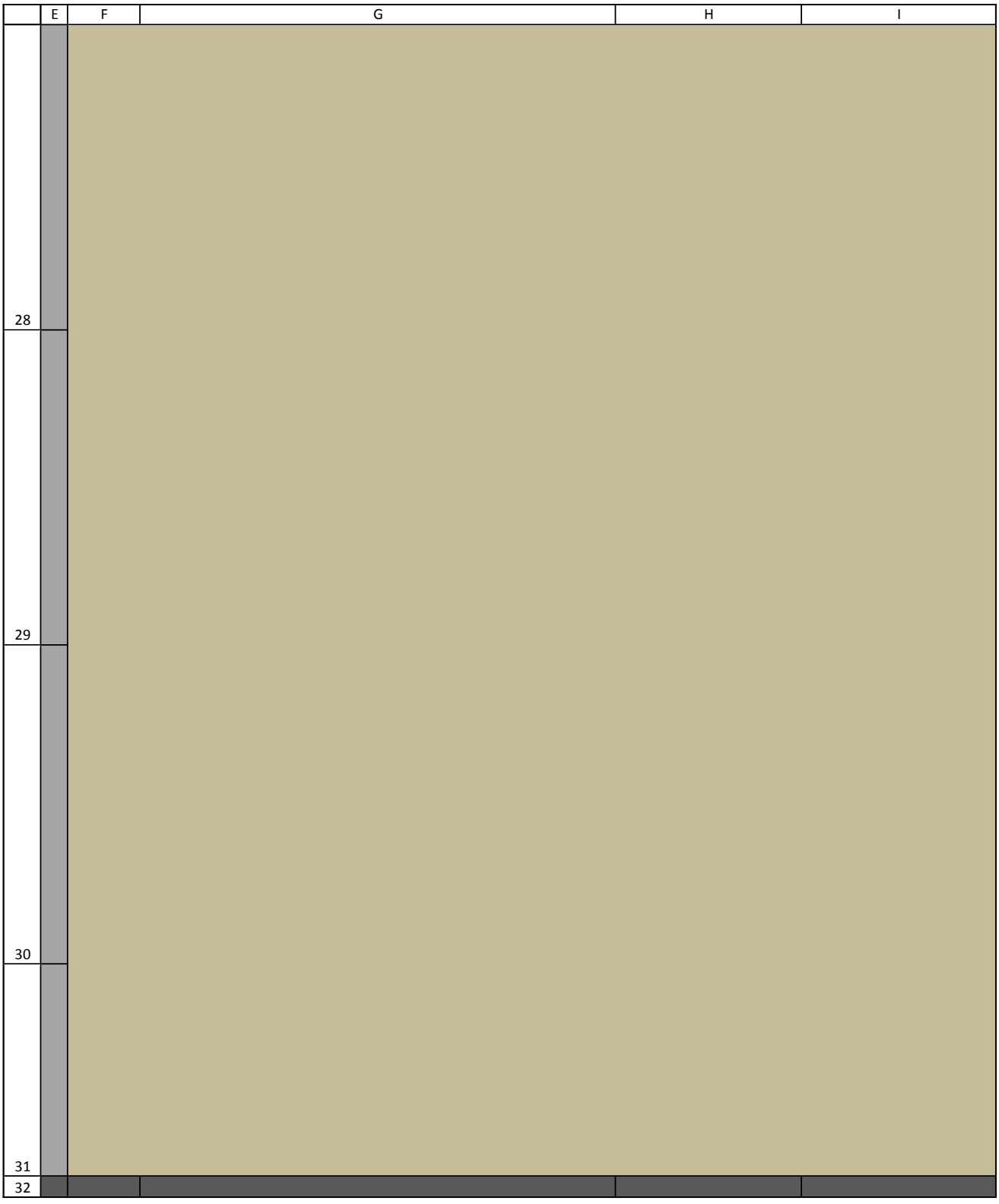

	E	F	G	H	I
33					AB is HIGHER than BC as AB requires right of way inspections.
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36					AB REQUIRES additional inspections of LVP/HVP/H2S pipelines. BC (in the Act and regulations) does not make this requirement.
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	E	F	G	H	I
38					AB REQUIRES operation and maintenance manuals to be developed, reviewed and updated. BC (in the Acts, regulations and Directives) has no requirement.
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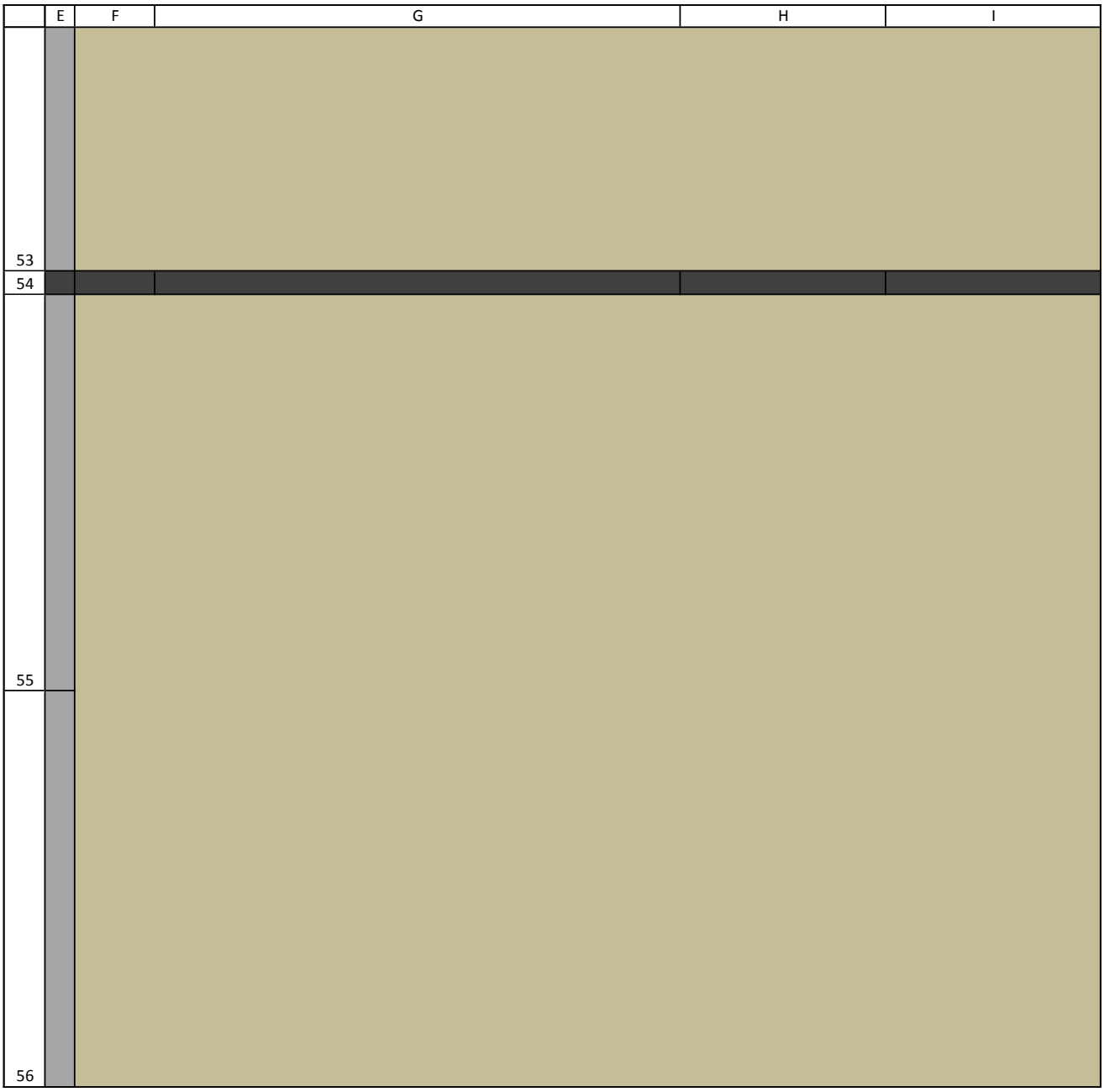
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	E	F	G	H	I
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58					AB REQUIRES that a pipeline only transmit the licensed substance. A substance change requires a licence amendment application in accordance with Directive 56, schedule 3. The Board can establish necessary testing. These requirements are unmatched in BC (in the Acts and regulations).
59					
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61					When H2S content will increase, AB REQUIRES Directive 26 be followed, and review the impact. BC (in the Act and regulations) does not set this requirement.
62					
63					AB REQUIRES a routine licence amendment be filled out to remove/install a liner, and does not require notification. BC (in the Act and regulations) does not mention liners.

	E	F	G	H	I
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	E	F	G	H	I
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72					In AB the Board may REQUIRE a pipeline to be retested, BC (in the Act and regulations) does not make this requirement. AB also discusses the CSA requirement for an existing pipeline to have an engineering assessment prior to pressure testing.
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74					

	E	F	G	H	I
75					AB REQUIRES a consideration of pressure testing needs when changing a substance. BC (in the Act and regulations) does not make this a requirement.
76					AB REQUIRES a licence amendment in accord with Directive 56, and the Board may set any necessary testing requirements. BC (in the Act and regulations) does not set this requirement.
77					
78					
79					When a maximum operating pressure (MOP) will increase, AB REQUIRES the checklist with Directive 56 be considered, and determine what is affected. BC (in the Act and regulations) does not set this requirement.
80					

	E	F	G	H	I
81					When an MOP will decrease, AB REQUIRES a determination of what is affected. BC (in the Act and regulations) does not set this requirement.
82					
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	E	F	G	H	I
85					AB provides direction on ESD valves used on lines with more than 10 moles of H2S per kilomole of natural gas, BC (in the Act and regulations) does not make this provision.
86					

	E	F	G	H	I
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89					
90					AB provides direction on overpressure protection devices, BC (in the Act and regulations) does not make this provision.

	E	F	G	H	I
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	E	F	G	H	I
93					
94					AB REQUIRES two independent safety systems for product blending, and outlines requirements for it. BC (in the Act and regulations) does not mention these requirements.
95					
96					
97					Annex E of CSA Z662 is manditory in AB not in BC
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99					

	E	F	G	H	I
100					Annex E of CSA Z662 is manditory in AB not in BC
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	E	F	G	H	I
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	E	F	G	H	I
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	J	K	L	M	N
2	**Saskatchewan**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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	J	K	L	M	N
33					AB is HIGHER than SK as AB requires right of way inspections.
34					
35					
36					AB REQUIRES additional inspections of LVP/HVP/H2S pipelines. SK (in the Act and regulations) does not make this requirement.
37					

	J	K	L	M	N
38					AB REQUIRES operation and maintenance manuals to be developed, reviewed and updated. SK (in the Acts, regulations and Directives) has no requirement.
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	J	K	L	M	N
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	J	K	L	M	N
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	J	K	L	M	N
57					
58					AB REQUIRES that a pipeline only transmit the licensed substance. A substance change requires a licence amendment application in accord with Directive 56, schedule 3. The Board can establish necessary testing. These requirements are unmatched in SK (in the Acts and regulations).
59					
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61					When H2S content will increase, AB REQUIRES Directive 26 be followed, and review the impact. SK (in the Act and regulations) does not set this requirement.
62					
63					AB REQUIRES a routine licence amendment be filled out to remove/install a liner, and does not require notification. BC (in the Act and regulations) does not mention liners.

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72	The Pipelines Regulations	Section 18, Pg 8	(3) Where the minister has reason to doubt the integrity of a pipeline or portions of a pipeline, he or she may request at any time during the operation of the pipeline: (a) additional pressure tests on the pipeline or any portion of the pipeline;		AB is EQUAL to SK in that the Board/minister may REQUIRE a pipeline to be retested. AB also discusses the CSA requirement for an existing pipeline to have an engineering assessment prior to pressure testing.
73					
74					

	J	K	L	M	N
75					AB REQUIRES pressure testing requirements be considered when changing a substance. SK (in the Act and regulations) does not make this requirement.
76					AB REQUIRES a licence amendment in accord with Directive 56, and the Board may set any necessary testing requirements. SK (in the Act and regulations) does not set this requirement.
77					
78					
79					When an MOP will increase, AB REQUIRES the checklist with Directive 56 be considered and determine what is affected. SK (in the Act and regulations) does not set this requirement.
80					

	J	K	L	M	N
81					When an MOP will decrease, AB REQUIRES a determination of what is affected. SK (in the Act and regulations) does not set this requirement.
82					
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	J	K	L	M	N
85					AB PROVIDES direction on ESD valves used on lines with more than 10 moles of H2S per kilomole of natural gas, SK (in the Act and regulations) does not make this provision.
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	J	K	L	M	N
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89					
90					AB PROVIDES direction on overpressure protection devices, SK (in the Act and regulations) does not make this provision.

	J	K	L	M	N
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	J	K	L	M	N
93					
94					AB REQUIRES two independent safety systems for product blending, and outlines requirements for it. SK (in the Act and regulations) does not mention these requirements.
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97	The Pipelines Regulations	Section 15, Pg 7	Transported substances to be measured 15(1) For the purposes of leak detection and material balance, every operator of a pipeline for which a licence has been issued shall ensure that all substances transported by that pipeline are measured accurately to a degree acceptable to the minister. (2) Notwithstanding subsection (1), where an operator is in charge or has control of a number of interconnected pipelines for which separate licences have been issued, the operator is not required to measure the substances being transported by those interconnected pipelines more than once		Annex E of CSA Z662 is manditory in AB not in Sask
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	J	K	L	M	N
100	The Pipelines Regulations	Section 12(3), Pg 6	(3) The minimum requirements for leak detection procedures on hydrocarbon liquid pipelines other than multi-phase pipelines must be in accordance with Appendix E of the most recent version of CSA Standard Z662, Oil and Gas Pipeline Systems.		Annex E of CSA Z662 is manditory in AB not in Sask
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	O	P	Q	R	S
2	**CSA**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
4					
5	CSA Z662-15 Guidelines for Pipeline System	N.11.2, pg. 456	N.11.2 Pipeline system integrity management program planning shall take the following into consideration, as appropriate for the type of pipeline system: .... (f) inspections, testing, patrols, and monitoring (see Clause N.12); ....(g) recommendations from previous integrity reviews and activities;		
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11	Pipeline System IMP	N.12.2, pg. 457	N.12.2 When the timing or frequency of inspection, testing, patrols, or monitoring is not specified in this Standard, the rationale and methods used to determine the timing or frequency shall be documented. Consideration shall be given to (a) the types of conditions or imperfections that are intended to be detected by each inspection, test, patrol, or monitoring activity; (b) experience related to the rate or timing of changes in the imperfections or conditions;		

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15	CSA Z662-15 Oil and Gas Guidelines for Pipeline	N.12, pg. 457	N.12 Inspections, testing, patrols, and monitoring N.12.1 Operating companies shall document and implement the methods and procedures used to conduct inspections, testing, patrols, and monitoring in accordance with Clauses 9 and 10 and, as appropriate, Clause 12. Consideration shall be given to ..... (f) size, location and operational position of pipeline system valves; ..... N.12.4 Consideration shall be given to using in-line inspection equipment to detect .....; (b) dents; (c) cracks; and (d) excessive pipe movement.		
16					

	O	P	Q	R	S
17	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.13.1, pg. 458	N.13 Evaluation of inspection, testing, patrol, and monitoring results N.13.1 General When inspection, testing, patrol, and monitoring results indicate the presence of conditions or imperfections that might lead to failure or damage incidents with significant consequences, operating companies shall perform an engineering assessment as specified in Clause N.13.2.2, or take corrective action as specified in Clause 10.9.8.		
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19	Pipeline System IMP	N.11.4, pg. 456	N.11.4 Pipeline system integrity management program plans should include steps for reviewing completed integrity activities in order to (a) verify that the relevant methods and procedures for such activities were properly performed; (b) verify that changes in planned activities were reviewed and approved; (c) determine whether the intended objectives were achieved; (d) identify incomplete work and unresolved issues; (e) develop recommendations and plans for future work; and (f) verify that the relevant records were created or revised.		

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20	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.13.4, pg. 458	N.13 Evaluation of inspection, testing, patrol, and monitoring results ……N.13.4 Records of recommendations The operating company shall maintain records of recommendations and dispositions of recommendations.		
21					
22	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.8, pg 454	N.8 Hazard identification and control N.8.1 The operating company shall identify hazards that might lead to a failure or damage incident. Note: 8.5.2.3 can be used to provide guidance on hazard identification. N.8.2 The methods and data used for hazard identification shall be documented and take into consideration the primary causes and any additional failure or damage incident causes that are relevant. Note:H.2.6 provides guidance when identifying primary causes and sub-causes. N.8.3 Where hazards that might lead to a failure or damage incidents are identified, the operating company shall (a) assess and document the risks associated with such hazards in accordance with Clause N.9; or (b) implement and document measures for monitoring conditions that could lead to an incident with significant consequences and eliminate or mitigate such conditions, taking into consideration the options specified in Clause N.10.		
23	CSA Z662-11 Annex N Guidelines for Pipeline	N.11.2, pg. 456	N.11.2 Pipeline system integrity management program planning shall take the following into consideration, as appropriate for the type of pipeline system: …. (c) the options selected to control identified hazards (see Clause N.8); ….		
24	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.13.3, pg. 458	N.13.3 Natural hazard evaluations When inspections and patrols indicate soil settlement, slope movement, or washout that could cause excessive longitudinal stress or deflection of the pipe (see Clause 4.6), operating companies shall consider implementing a monitoring and evaluation program that includes criteria for corrective action to prevent failure incidents. The use of increased line patrols, in-line geometry tools, and slope inclinometers, as appropriate for the type of pipeline system, should be considered for such programs.		

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25	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.3.2, Pg 450	N.3.2 The operating company shall document the types of consequences they consider to be significant and the rationale for determining the significance of those consequences.		
26	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.9.1-N.9.3, pg 454	N.9.1 General Annex B provides risk analysis and risk evaluation guidelines for (a) estimating the frequency and consequences of incidents; (b) evaluating the significance of the estimated risk; and (c) identifying, evaluating, and implementing options for risk reduction. N.9.2 Risk analysis approach When selecting an appropriate approach for performing risk analysis (see Clause B.5.2), operating companies shall consider (a) the features that are unique to the design, construction, and operation of the pipeline system; (b) the availability of procedures, models, and information needed to perform the analysis; and (c) how the results of the risk assessment will be used. N.9.3 Risk evaluation When it is determined that the estimated risk level is significant (see Clause B.5.3.2), the following response shall be required: (a) the undertaking of a more refined level of risk analysis (see Clause N.9.4) in an effort to reduce the uncertainty or errors that might have led to an overestimate of the risk level; or (b) a consideration of options (see Clause N.9.5) that might be available to reduce the estimated risk level.		
27	Pipeline System IMP	N.9.4-N.9.5, pg 454	N.9.4 Risk analysis refinement The options to be considered for refinement of the risk analysis should include the following: (a) selection of a more rigorous approach for the analyses and estimates; (b) additional observations and analysis of the operating conditions; (c) inspections to provide more accurate and detailed information about the presence, location, and severity of identified hazards or imperfections; and (d) an analysis using more detailed information about (i) the size, characteristics, and location of potential releases; and (ii) the location, characteristics, and susceptibility of people, property, and the environment to adverse effects. N.9.5 Risk reduction evaluation The risk analysis and risk evaluation shall be repeated to establish that the options selected reduce the estimated risk to a level that is considered to be not significant. The options considered shall include the items specified in Clause N.10.		

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28	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.11, pg. 456	N.11 Integrity management program planning .... N.11.2 Pipeline system integrity management program planning shall take the following into consideration, as appropriate for the type of pipeline system: .... (d) method of inspections and analyses to refine the estimates of risk (see Clause N.9.4); (e) the options selected to reduce the estimated risk level (see Clauses N.9.5 and N.10 and Annex B);		
29	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.12.2, pg. 457	N.12.2 When the timing or frequency of inspection, testing, patrols, or monitoring is not specified in this Standard, the rationale and methods used to determine the timing or frequency shall be documented. Consideration shall be given to ..... (c) the effect of such changes on the estimated risk of failure incidents.		
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33	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.10.2, pg 455	N.10.2 External interference The options that may be used to reduce the frequency of failure and damage incidents associated with external interference include the following, as applicable: .... (c) vegetation control to improve right-of-way visibility; .... (e) increased frequency of right-of-way inspections and patrols;		AB requires ROW inspections inline with Annex N.
34	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.10.4, pg 456	N.10.4 Natural hazards The options that may be used to reduce the frequency of failure and damage incidents associated with natural hazards include the following, as applicable: .....(b) inspection and evaluation of areas subject to washout erosion, freeze-thaw, settlement due to construction or undermining, earthquake, or slope movement; (c) increased frequency of right-of-way inspections and patrols; (d) programs to monitor the pipeline system or soil movement (e.g., inspections using in-line geometry tools, survey techniques, and slope inclinometers);		
35	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.12, pg. 457	N.12 Inspections, testing, patrols, and monitoring N.12.1 Operating companies shall document and implement the methods and procedures used to conduct inspections, testing, patrols, and monitoring in accordance with Clauses 9 and 10 and, as appropriate, Clause 12. Consideration shall be given to .... (g) pipeline system patrolling;		
36	CSA Z662-11 Annex N Guidelines for Pipeline System IMP				AB REQUIRES additional inspections of LVP/HVP/H2S pipelines. Annex N does not make this requirement.
37					

	O	P	Q	R	S
38					AB REQUIRES operation and maintenance manuals to be developed, reviewed and updated. Annex N has no requirement.
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55	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.6, pg 453	N.6 Change management N.6.1 The operating company shall develop, document, and implement a change management process for changes that might affect the integrity of the pipeline system or the ability to manage the integrity of that system. This shall include the following types of change, as appropriate for the type of pipeline system: (a) those that are initiated and controlled by the operating company, such as changes to (i) ownership of the pipeline system; (ii) organization and personnel of the operating company; (iii) piping and control systems; (iv) system operating status; (v) operating conditions; (vi) service fluid characteristics; (vii) methods, practices, and procedures related to pipeline system integrity management; (viii) records related to pipeline system integrity management; and (b) those that are not initiated and not controlled by the operating company, such as changes in (i) technical requirements (e.g., industry standards, industry recommended practices, and regulations); and (ii) physical environment changes (e.g., new rights-of-way, land development, or new structures). N.6.2 The change management process shall have procedures in place to address and document the following, as appropriate for the type of pipeline system: (a) method of monitoring to identify anticipated and actual changes that could affect the integrity of the pipeline system; (b) identification of responsibilities for approving and implementing changes; (c) reasons for the changes; (d) analysis of implications and effects of the changes; (e) method of communication of changes to affected parties; and (f) timing of changes (e.g., dates of approvals and completions).		AB does not have additional information/requirements related to change management.
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61					When H2S content will increase, AB REQUIRES Directive 26 be followed and review the impact. Annex N does not set this requirement.
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63		N.10.3, pg 456	N.10.3 Imperfections The options that may be used to reduce the frequency of failure and damage incidents associated with imperfections (e.g., metal loss, cracking, and material, manufacturing, and construction defects) include the following, as applicable: ... (g) installation of liners;		

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72		N.10.3, pg 456	N.10.3 Imperfections The options that may be used to reduce the frequency of failure and damage incidents associated with imperfections (e.g., metal loss, cracking, and material, manufacturing, and construction defects) include the following, as applicable: ....(i) pressure testing as specified in Clause 10.3.9;		In AB the Board may REQUIRE a pipeline to be retested, which is inline with CSA requirements. AB also discusses the CSA requirement for an existing pipeline to have an engineering assessment prior to pressure testing.
73	CSA Z662-11 Annex N Guidelines for Pipeline System IMP				
74					

	O	P	Q	R	S
75					AB REQUIRES pressure testing requirements to be considered when changing a substance. ANNEX N does not make this requirement.
76					AB REQUIRES a licence amendment in accord with Directive 56, and the Board may set any necessary testing requirements. Annex N does not set this requirement.
77					
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79					When an MOP will increase, AB REQUIRES the checklist with Directive 56 be considered and determine what is affected. Annex N does not set this requirement.
80					

	O	P	Q	R	S
81		N.10.3, pg 456	N.10.3 Imperfections The options that may be used to reduce the frequency of failure and damage incidents associated with imperfections (e.g., metal loss, cracking, and material, manufacturing, and construction defects) include the following, as applicable: (a) temporary or permanent reductions in the established operating pressure;		AB gives directions for a decrease in MOP. This is inline with Annex N which lists pressure reduction as one way to reduce failures/damage.
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	O	P	Q	R	S
85	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.10.5, pg 456	N.10.5 Consequence reduction The options that may be used to reduce the consequences associated with failure and damage incidents include the following, as applicable: ...(b) improved methods for control and shutdown of the supply sources; (c) improved methods to limit the size of a service fluid release (e.g., reduced spacing of block valves or isolating valves, and the use of remotely operated valves); ...		AB REQUIRES an engineering assessment to define the pipeline operating conditions and the closure parameters to ensure the release volume is as low as reasonably practicable. This is inline with CSA requirements.
86	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.12, pg. 457	N.12 Inspections, testing, patrols, and monitoring N.12.1 Operating companies shall document and implement the methods and procedures used to conduct inspections, testing, patrols, and monitoring in accordance with Clauses 9 and 10 and, as appropriate, Clause 12. Consideration shall be given to ..... ; (d) shutdown devices and systems;		AB REQUIRES preventative maintenance, servicing and function testing of the ESD's. This is in line with CSA requirements.

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90	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.12, pg. 457	N.12 Inspections, testing, patrols, and monitoring N.12.1 Operating companies shall document and implement the methods and procedures used to conduct inspections, testing, patrols, and monitoring in accordance with Clauses 9 and 10 and, as appropriate, Clause 12. Consideration shall be given to ..... e) pressure-control, pressure-limiting, and pressure-relieving systems; ...		AB PROVIDES direction on overpressure protection devices, including assessments, testing and inspections. This is in line with CSA requirements.

	O	P	Q	R	S
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	O	P	Q	R	S
93					
94					AB REQUIRES two independent safety systems for product blending and outlines requirements for it. Annex N does not mention these requirements.
95					
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97					AB made Annex E manditory
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	O	P	Q	R	S
100	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.10.5, pg 456	N.10.5 Consequence reduction The options that may be used to reduce the consequences associated with failure and damage incidents include the following, as applicable: (a) improved methods for early detection of a service fluid release; ...		AB is EQUAL to CAN as both require the minimum leak detection requirements set out in CSA Z662 be followed.
101	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.12, pg. 457	N.12 Inspections, testing, patrols, and monitoring N.12.1 Operating companies shall document and implement the methods and procedures used to conduct inspections, testing, patrols, and monitoring in accordance with Clauses 9 and 10 and, as appropriate, Clause 12. Consideration shall be given to ..... ; (c) leak detection methods and devices;		

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	T	U	V	W	X
2	**CANADA (NEB)**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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	T	U	V	W	X
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15	Regulations	Part 6, Section 39, Pg. 14	39. A company shall develop a surveillance and monitoring program for the protection of the pipeline, the public and the environment.		CAN requires a surveillance and monitoring program be developed. AB does not have the same requirement, but, requires Annex N to be followed and Condition Monitoring is one aspect of the PIM program detailed there.
16	Regulations	Part 6, Section 37, Pg. 13	37. A company shall develop and implement a pipeline control system that (a) comprises the facilities and procedures used to control and monitor the operation of the pipeline;		CAN requires a pipeline control system. AB does not have the same requirement, but, requires Annex N to be followed. One aspect of the PIM program detailed there is Condition Monitoring.

	T	U	V	W	X
17	Onshore Pipeline Regulations	Part 6, Section 41, Pg. 14	41. (1) If a company finds a level of defect in excess of that allowed by CSA Z662 on its pipeline, the company shall document the particulars of the defect, its likely cause and the corrective action taken or planned to be taken. (2) A company shall submit the documentation referred to in subsection (1) to the Board when required to do so.		CAN requires a defect and its cause to be documented, as well as corrective action/plan. AB does not have the same requirement, but, requires Annex N to be followed. One aspect of the PIM program detailed there is the requirement for an engineering assessment.
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19	Onshore Pipeline Regulations	Part 9, Section 53, Pg. 18	53. (1) A company shall conduct an audit and an inspection on a regular basis to ensure its pipeline is .... operated .... in compliance with (a) Part III of the Act; (b) Part V of the Act, as it relates to the protection of property and the environment and the safety of the public and of the company's employees; (c) these Regulations; and (d) the terms and conditions of any certificate or order issued by the Board, as they relate to the protection of property and the environment and the safety of the public and of the company's employees. (2) The audit shall document (a) all non-compliance noted; and (b) any corrective action taken or planned to be taken		CAN requires an internal audit to ensure compliance. AB does not have the same requirement, but, requires Annex N to be followed. One aspect of the PIM program detailed there is "reviewing completed integrity activities".

	T	U	V	W	X
20	Onshore Pipeline Regulations	Part 9, Section 55, Pg. 19	55. (1) A company shall regularly conduct an audit of its (a) pipeline control system developed under section 37; ..... (2) The documents prepared following the audit shall include (a) any deficiencies noted; and (b) any corrective action taken or planned to be taken.		
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	T	U	V	W	X
33	Pipeline Safety Regulations, Part II SOR/88-529	Section 15, Pg 7	15. (1) The pipeline company shall make such inspections as are necessary to ensure that any deterioration of a facility that might adversely affect a pipe is detected, and shall inform the facility owner, in writing, of any deterioration that is detected. (2) Where an inspection made pursuant to subsection (1) reveals deterioration of a facility sufficient to warrant removal of the facility, the pipeline company shall inform the Board.		AB is HIGHER than CAN as CAN requires inspections of facilities that may affect the pipeline, and this is just one aspect of the ROW inspections that AB requires.
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36					AB REQUIRES additional inspections of LVP/HVP/H2S pipelines. CAN (in the Act and regulations) does not make this requirement.
37					

	T	U	V	W	X
38	Onshore Pipeline Regulations	Part 6, Section 27, Pg. 10	27. A company shall develop, regularly review and update as required, operation and maintenance manuals that provide information and procedures to promote safety, environmental protection and efficiency in the operation of the pipeline and shall submit them to the Board when required to do so.		AB is EQUAL to CAN as both require operation and maintenance manuals to be developed, reviewed and updated. CAN is slightly HIGHER in that the manual should provide information and procedures to promote safety, environmental protection and efficiency. AB (in the Acts, regulations and Directives) has NO REQUIREMENT.
39	Onshore Pipeline Regulations	Part 6, Section 31, Pg. 12	31. (1) A company shall develop a maintenance safety manual and shall submit it to the Board when required to do so. (2) The company shall keep a copy of the maintenance safety manual or the relevant parts of it at each maintenance site of the pipeline, in a location where it is accessible to every person engaged in maintenance at the site.		CAN requires a company to develop a maintenance safety manual, keep a copy at each maintenance site where it is accessible to all. AB (in the Acts, regulations and Directives) has NO REQUIREMENT.
40	Onshore Pipeline Regulations	Part 6, Section 28, Pg. 11	28. A company shall inform all persons associated with operation activities on the pipeline of the practices and procedures to be followed and make available to them the relevant portions of the operation and maintenance manuals.		CAN requires a company to inform all persons of the practices and procedures/relevant portions of the manuals available. AB (in the Acts, regulations and Directives) has NO REQUIREMENT.

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44	Onshore Pipeline Regulations	Part 6, Section 30, Pg. 11	30. A company shall, during the maintenance of a pipeline, take all reasonable steps so that (a) the maintenance activities do not create a hazard to the public or the environment; and (b) all persons at the maintenance site who are not involved in the maintenance of the pipeline are informed of the practices and procedures that are to be followed for their safety or for the protection of the environment.		CAN requires a company to take all reasonable steps so that maintenance activities do not create a hazard to the public/or environment; All persons not involved in the maintenance are to be informed of the practices and procedures that are to be followed for their safety or for the protection of the environment. AB (in the Acts, regulations and Directives) has NO REQUIREMENT.

	T	U	V	W	X
45	Onshore Pipeline Regulations	Part 6, Section 29, Pg. 11	29. (1) If a company contracts for the provision of services in respect of the maintenance of a pipeline, the company shall (a) inform the contractor of all special conditions associated with the maintenance; (b) inform the contractor of all special safety practices and procedures necessitated by the conditions or features specific to the maintenance; (c) take all reasonable steps to ensure that maintenance activities are conducted in accordance with the manual developed under section 31; and (d) authorize a person to halt a maintenance activity in circumstances where, in the person's judgement, the maintenance activity is not being conducted in accordance with the manual developed under section 31 or is creating a hazard to anyone at the maintenance site. (2) The person referred to in paragraph (1)(d) must have sufficient expertise, knowledge and training to competently carry out the obligations set out in that paragraph.		CAN outlines requirements for maintenance contractors. AB (in the Acts, regulations and Directives) has NO REQUIREMENT.
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47	Onshore Pipeline Regulations	Part 6, Section 46.1, 46.2, Pg. 16	46. (1) A company shall develop and implement a training program for any employee of the company who is directly involved in the operation of the pipeline. (2) The training program shall instruct the employee on (a) the safety regulations and procedures applicable to the day-to-day operation of the pipeline; ….(c) the procedures for the proper operation of the equipment that the employee could reasonably be expected to use; ….		CAN requires a training program that instructs an employee on safety regulations and procedures applicable to operation, and procedures for the proper operation of equipment. AB (in the Acts, regulations and Directives) has NO REQUIREMENT.
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55	Onshore Pipeline Regulations	General, Section 6, Pg. 5	6. A company shall develop and apply a program to monitor changes in respect of designs, specifications, standards or procedures.		AB is EQUAL in that CAN requires a program to monitor changes. AB requires Annex N be followed for the PIM program, where change management is included.
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58	Pipeline	Part 6, Section 43, Pg. 15	43. If a company proposes a change of service .....for the pipeline, the company shall submit an application for the change ... to the Board. NOTE Change in service = change in fluid		AB is EQUAL in that both require a licence amendment application. AB EXCEEDS CAN in that amendment must be in accord with Directive 56, schedule 3. The Board can establish
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61					When H2S content will increase, AB REQUIRES Directive 26 be followed, and review the impact. CAN (in the Act and regulations) does not set this requirement.
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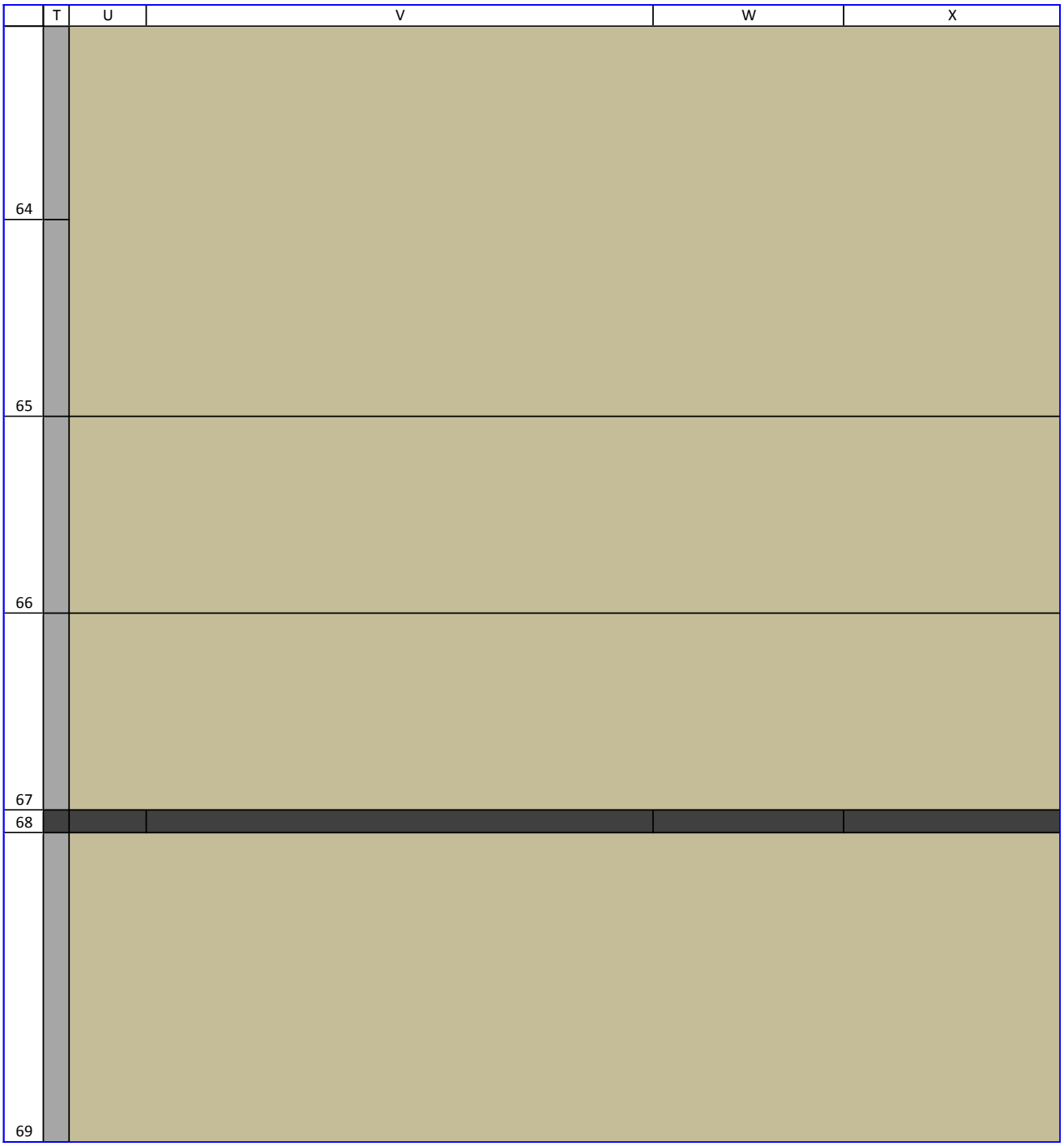
63					AB REQUIRES a routine licence amendment be filled out to remove/install a liner, and does not require notification. CAN (in the Act and regulations) does not mention liners.



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72					In AB the Board may REQUIRE a pipeline to be retested, CAN (in the Act and regulations) does not make this requirement. AB also discusses the CSA requirement for an existing pipeline to have an engineering assessment prior to pressure testing.
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	T	U	V	W	X
75					AB REQUIRES pressure testing requirements be considered when changing a substance. CAN (in the Act and regulations) does not make this requirement.
76	Onshore Pipeline Regulations	Part 6, Section 43, Pg. 15	43. If a company proposes ….. an increase in the maximum operating pressure for the pipeline, the company shall submit an application for the change or increase to the Board.		AB is EQUAL in that both require a licence amendment. AB REQUIRES a licence amendment in accord with Directive 56, and the Board may set any necessary testing requirements. CAN (in the Act and regulations) does not set this requirement.
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79	Onshore Pipeline Regulations				When an MOP will increase, AB REQUIRES the checklist with Directive 56 be considered, and determine what is affected. CAN (in the Act and regulations) does not set this requirement.
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	T	U	V	W	X
81					When an MOP will decrease, AB REQUIRES a determination of what is affected. CAN (in the Act and regulations) does not set this requirement.
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	T	U	V	W	X
85					AB provides direction on ESD valves used on lines with more than 10 moles of H2S per kilomole of natural gas, CAN (in the Act and regulations) does not make this provision.
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	T	U	V	W	X
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90					AB provides direction on overpressure protection devices, CAN (in the Act and regulations) does not make this provision.

	T	U	V	W	X
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	T	U	V	W	X
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94					AB REQUIRES two independent safety systems for product blending, and outlines requirements for it. CAN (in the Act and regulations) does not mention these requirements.
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97					While not directly stated, AB is EQUAL as CSA must be complied with in CAN as well.
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	T	U	V	W	X
100	Onshore Pipeline Regulations	Part 6, Section 37, Pg. 13	37. A company shall develop and implement a pipeline control system that .....(c) includes a leak detection system that, for oil pipelines, meets the requirements of CSA Z662 and reflects the level of complexity of the pipeline, the pipeline operation and the products transported.		AB is EQUAL to CAN as both require the minimum leak detection requirements set out in CSA Z662 be followed. AB is LESSER in that it does not (in the Act, regulations or Directives) list specific requirements for the retention of leak detention data.
101	Onshore Pipeline Regulations	Part 10, Section 56, Pg. 19	56. A company shall, in addition to complying with the record retention requirements set out in the CSA standards referred to in section 4, retain (a) ….for leak detection data, which shall be retained for six months;		

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3	**Source**		**DIRECT QUOTE (Level 1)**
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5	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (f), Pg. 7	(2) Periodic inspections.— Not later than October 24, 1995, the Secretary shall prescribe, if necessary, additional standards requiring the periodic inspection of each pipeline the operator of the pipeline identifies under section 60109 of this title. The standards shall include any circumstances under which an inspection shall be conducted with an instrumented internal inspection device and, if the device is not required, use of an inspection method that is at least as effective as using the device in providing for the safety of the pipeline. (NOTE: Section 60109 refers to pipelines in high-density population areas and environmentally sensitive areas)
6	[illegible] Natural and Other Gas by Pipeline: Minimum Federal	Subpart O, 192.919, pg 484	192.919 What must be in the baseline assessment plan? An operator must include each of the following elements in its written baseline assessment plan: (a) Identification of the potential threats to each covered pipeline segment and the information supporting the threat identification. (See § 192.917.); (b) The methods selected to assess the integrity of the line pipe, including an explanation of why the assessment method was selected to address the identified threats to each covered segment. The integrity assessment method an operator uses must be based on the threats identified to the covered segment. (See § 192.917.) More than one method may be required to address all the threats to the covered pipeline segment; (c) A schedule for completing the integrity assessment of all covered segments, including risk factors considered in establishing the assessment schedule; (d) If applicable, a direct assessment plan that meets the requirements of §§ 192.923, and depending on the threat to be addressed, of § 192.925, § 192.927, or § 192.929; and (e) A procedure to ensure that the baseline assessment is being conducted in a manner that minimizes environmental and safety risks.
7	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 c, pg 590	195.452 Pipeline integrity management in high consequence areas. ...(c) What must be in the baseline assessment plan? (1) An operator must include each of the following elements in its written baseline assessment plan: (i) The methods selected to assess the integrity of the line pipe. An operator must assess the integrity of the line pipe by any of the following methods. The methods an operator selects to assess low frequency electric resistance welded pipe or lap welded pipe susceptible to longitudinal seam failure must be capable of assessing seam integrity and of detecting corrosion and deformation anomalies. (A) Internal inspection tool or tools capable of detecting corrosion and deformation anomalies including dents, gouges and grooves; (B) Pressure test conducted in accordance with subpart E of this part; (C) External corrosion direct assessment in accordance with § 195.588; or (D) Other technology that the operator demonstrates can provide an equivalent understanding of the condition of the line pipe. An operator choosing this option must notify the Office of Pipeline Safety (OPS) 90 days before conducting the assessment, by sending a notice to the address or facsimile number specified in paragraph (m) of this section. (ii) A schedule for completing the integrity assessment; (iii) An explanation of the assessment methods selected and evaluation of risk factors considered in establishing the assessment schedule. (2) An operator must document, prior to implementing any changes to the plan, any modification to the plan, and reasons for the modification.
8	Title 49 - US Code - Chapter 601 - Safety	Section 60108 (e), Pg. 14	(a) Plans.— (1) Each person owning or operating an intrastate gas pipeline facility or hazardous liquid pipeline facility shall carry out a current written plan (including any changes) for inspection and maintenance of each facility used in the transportation and owned or operated by the person. A copy of the plan shall be kept at any office of the person the Secretary of Transportation considers appropriate. The Secretary also may require a person owning or operating a pipeline facility subject to this chapter to file a plan for inspection and maintenance for approval. (2) If the Secretary or a State authority responsible for enforcing standards prescribed under this chapter decides that a plan required under paragraph (1) of this subsection is inadequate for safe operation, the Secretary or authority shall require the person to revise the plan. Revision may be required only after giving notice and an opportunity for a hearing. A plan required under paragraph (1) must be practicable and designed to meet the need for pipeline safety and must include terms designed to enhance the ability to discover safety-related conditions described in section 60102 (h)(1) of this title.

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9	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.921, pg 484	192.921 How is the baseline assessment to be conducted? (a) Assessment methods. An operator must assess the integrity of the line pipe in each covered segment by applying one or more of the following methods depending on the threats to which the covered segment is susceptible. An operator must select the method or methods best suited to address the threats identified to the covered segment (See § 192.917). (1) Internal inspection tool or tools capable of detecting corrosion, and any other threats to which the covered segment is susceptible. An operator must follow ASME/ANSI B31.8S (incorporated by reference, see § 192.7), section 6.2 in selecting the appropriate internal inspection tools for the covered segment. (2) Pressure test conducted in accordance with subpart J of this part. An operator must use the test pressures specified in Table 3 of section 5 of ASME/ANSI B31.8S, to justify an extended reassessment interval in accordance with § 192.939. (3) Direct assessment to address threats of external corrosion, internal corrosion, and stress corrosion cracking. An operator must conduct the direct assessment in accordance with the requirements listed in § 192.923 and with, as applicable, the requirements specified in §§ 192.925, 192.927 or 192.929; (4) Other technology that an operator demonstrates can provide an equivalent understanding of the condition of the line pipe. An operator choosing this option must notify the Office of Pipeline Safety (OPS) 180 days before conducting the assessment, in accordance with § 192.949. An operator must also notify a State or local pipeline safety authority when either a covered segment is located in a State where OPS has an interstate agent agreement, or an intrastate covered segment is regulated by that State. (b) Prioritizing segments. An operator must prioritize the covered pipeline segments for the baseline assessment according to a risk analysis that considers the potential threats to each covered segment. The risk analysis must comply with the requirements in § 192.917. (c) Assessment for particular threats. In choosing an assessment method for the baseline assessment of each covered segment, an operator must take the actions required in § 192.917(e) to address particular threats that it has identified. (d) Time period. An operator must prioritize all the covered segments for assessment in accordance with § 192.917 (c) and paragraph (b) of this section. An operator must assess at least 50% of the covered segments beginning with the highest risk segments, by December 17, 2007. An operator must complete the baseline assessment of all covered segments by December 17, 2012. (e) Prior assessment. An operator may use a prior integrity assessment conducted before December 17, 2002 as a baseline assessment for the covered segment, if the integrity assessment meets the baseline requirements in this subpart and subsequent remedial actions to address the conditions listed in § 192.933 have been carried out. In addition, if an operator uses this prior assessment as its baseline assessment, the operator must reassess the line pipe in the covered segment according to the requirements of § 192.937 and § 192.939. (f) Newly identified areas. When an operator identifies a new high consequence area (see § 192.905), an operator must complete the baseline assessment of the line pipe in the newly identified high consequence area within ten (10) years from the date the area is identified. (g) Newly installed pipe. An operator must complete the baseline assessment of a newly-installed segment of pipe covered by this subpart within ten (10) VerDate Mar<15>2010 14:56 Jan 03, 2012 Jkt 223216 PO 00000 Frm 00497 Fmt 8010 Sfmt 8010 Y:\SGML\223216.XXX 223216 wreier-aviles on DSK3TPTVN1PROD with CFR 486 § 192.923 49 CFR Ch. I (10–1–11 Edition) years from the date the pipe is installed. An operator may conduct a pressure test in accordance with paragraph (a)(2) of this section, to satisfy the requirement for a baseline assessment. (h) Plastic transmission pipeline. If the threat analysis required in § 192.917(d) on a plastic transmission pipeline indicates that a covered segment is susceptible to failure from causes other than third-party damage, an operator must conduct a baseline assessment of the segment in accordance with the requirements of this section and of § 192.917. The operator must justify the use of an alternative assessment method that will address the identified threats to the covered segment.
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11	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.923, pg 486	192.923 How is direct assessment used and for what threats? (a) General. An operator may use direct assessment either as a primary assessment method or as a supplement to the other assessment methods allowed under this subpart. An operator may only use direct assessment as the primary assessment method to address the identified threats of external corrosion (ECDA), internal corrosion (ICDA), and stress corrosion cracking (SCCDA). (b) Primary method. An operator using direct assessment as a primary assessment method must have a plan that complies with the requirements in— (1) ASME/ANSI B31.8S (incorporated by reference, see § 192.7), section 6.4; NACE SP0502–2008 (incorporated by reference, see § 192.7); and § 192.925 if addressing external corrosion (ECDA). (2) ASME/ANSI B31.8S, section 6.4 and appendix B2, and § 192.927 if addressing internal corrosion (ICDA). (3) ASME/ANSI B31.8S, appendix A3, and § 192.929 if addressing stress corrosion cracking (SCCDA). (c) Supplemental method. An operator using direct assessment as a supplemental assessment method for any applicable threat must have a plan that follows the requirements for confirmatory direct assessment in § 192.931.

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12	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.939, pg 494	192.939 What are the required reassessment intervals? An operator must comply with the following requirements in establishing the reassessment interval for the operator's covered pipeline segments. (a) Pipelines operating at or above 30% SMYS. An operator must establish a reassessment interval for each covered segment operating at or above 30% SMYS in accordance with the requirements of this section. The maximum reassessment interval by an allowable reassessment method is seven years. If an operator establishes a reassessment interval that is greater than seven years, the operator must, within the seven-year period, conduct a confirmatory direct assessment on the covered segment, and then conduct the followup reassessment at the interval the operator has established. A reassessment carried out using confirmatory direct assessment must be done in accordance with § 192.931. The table that follows this section sets forth the maximum allowed reassessment intervals. (1) Pressure test or internal inspection or other equivalent technology. An operator that uses pressure testing or internal inspection as an assessment method must establish the reassessment interval for a covered pipeline segment by— (i) Basing the interval on the identified threats for the covered segment (see § 192.917) and on the analysis of the results from the last integrity assessment and from the data integration and risk assessment required by § 192.917; or (ii) Using the intervals specified for different stress levels of pipeline (operating at or above 30% SMYS) listed in ASME/ANSI B31.8S, section 5, Table 3. (2) External Corrosion Direct Assessment. An operator that uses ECDA that meets the requirements of this subpart must determine the reassessment interval according to the requirements in paragraphs 6.2 and 6.3 of NACE SP0502– 2008 (incorporated by reference, see § 192.7). (3) Internal Corrosion or SCC Direct Assessment. An operator that uses ICDA or SCCDA in accordance with the requirements of this subpart must determine the reassessment interval according to the following method. However, the reassessment interval cannot exceed those specified for direct assessment in ASME/ANSI B31.8S, section 5, Table 3. (i) Determine the largest defect most likely to remain in the covered segment and the corrosion rate appropriate for the pipe, soil and protection conditions; (ii) Use the largest remaining defect as the size of the largest defect discovered in the SCC or ICDA segment; and (iii) Estimate the reassessment interval as half the time required for the largest defect to grow to a critical size. (b) Pipelines Operating Below 30% SMYS. An operator must establish a reassessment interval for each covered segment operating below 30% SMYS in accordance with the requirements of this section. The maximum reassessment interval by an allowable reassessment method is seven years. An operator must establish reassessment by at least one of the following— VerDate Mar<15>2010 14:56 Jan 03, 2012 Jkt 223216 PO 00000 Frm 00506 Fmt 8010 Sfmt 8010 Y:\SGML\223216.XXX 223216 wreier-aviles on DSK3TPTVN1PROD with CFR 495 Pipeline and Hazardous Materials Safety Admin., DOT § 192.941 (1) Reassessment by pressure test, internal inspection or other equivalent technology following the requirements in paragraph (a)(1) of this section except that the stress level referenced in paragraph (a)(1)(ii) of this section would be adjusted to reflect the lower operating stress level. If an established interval is more than seven years, the operator must conduct by the seventh year of the interval either a confirmatory direct assessment in accordance with § 192.931, or a low stress reassessment in accordance with § 192.941. (2) Reassessment by ECDA following the requirements in paragraph (a)(2) of this section. (3) Reassessment by ICDA or SCCDA following the requirements in paragraph (a)(3) of this section. (4) Reassessment by confirmatory direct assessment at 7-year intervals in accordance with § 192.931, with reassessment by one of the methods listed in paragraphs (b)(1) through (b)(3) of this section by year 20 of the interval. (5) Reassessment by the low stress assessment method at 7-year intervals in accordance with § 192.941 with reassessment by one of the methods listed in paragraphs (b)(1) through (b)(3) of this section by year 20 of the interval. (6) The following table sets forth the maximum reassessment intervals. Also refer to Appendix E.II for guidance on Assessment Methods and Assessment Schedule for Transmission Pipelines Operating Below 30% SMYS. In case of conflict between the rule and the guidance in the Appendix, the requirements of the rule control. An operator must comply with the following requirements in establishing a reassessment interval for a covered segment:
13	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 j, pg 594	195.452 Pipeline integrity management in high consequence areas. ... (j) What is a continual process of evaluation and assessment to maintain a pipeline's integrity?—(1) General. After completing the baseline integrity assessment, an operator must continue to assess the line pipe at specified intervals and periodically evaluate the integrity of each pipeline segment that could affect a high consequence area. (2) Evaluation. An operator must conduct a periodic evaluation as frequently as needed to assure pipeline integrity. An operator must base the frequency of evaluation on risk factors specific to its pipeline, including the factors specified in paragraph (e) of this section. The evaluation must consider the results of the baseline and periodic integrity assessments, information analysis (paragraph (g) of this section), and decisions about remediation, and preventive and mitigative actions (paragraphs (h) and (i) of this section). (3) Assessment intervals. An operator must establish five-year intervals, not to exceed 68 months, for continually assessing the line pipe's integrity. An operator must base the assessment intervals on the risk the line pipe poses to the high consequence area to determine the priority for assessing the pipeline segments. An operator must establish the assessment intervals based on the factors specified in paragraph (e) of this section, the analysis of the results from the last integrity assessment, and the information analysis required by paragraph (g) of this section. (4) Variance from the 5-year intervals in limited situations—(i) Engineering basis. ..... (ii) Unavailable technology. .... (5) Assessment methods. An operator must assess the integrity of the line pipe by any of the following methods. The methods an operator selects to assess low frequency electric resistance welded pipe or lap welded pipe susceptible to longitudinal seam failure must be capable of assessing seam integrity and of detecting corrosion and deformation anomalies. (i) Internal inspection tool or tools capable of detecting corrosion and deformation anomalies including dents, gouges and grooves; (ii) Pressure test conducted in accordance with subpart E of this part; (iii) External corrosion direct assessment in accordance with § 195.588; or (iv) Other technology that the operator demonstrates can provide an equivalent understanding of the condition of the line pipe. An operator choosing this option must notify OPS 90 days before conducting the assessment, by sending a notice to the address or facsimile number specified in paragraph (m) of this section.
14	[illegible] and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.943, pg 496	192.943 When can an operator deviate from these reassessment intervals? (a) Waiver from reassessment interval in limited situations. In the following limited instances, OPS may allow a waiver from a reassessment interval required by § 192.939 if OPS finds a waiver would not be inconsistent with pipeline safety. (1) Lack of internal inspection tools. An operator who uses internal inspection as an assessment method may be able to justify a longer reassessment period for a covered segment if internal inspection tools are not available to assess the line pipe. To justify this, the operator must demonstrate that it cannot obtain the internal inspection tools within the required reassessment period and that the actions the operator is taking in the interim ensure the integrity of the covered segment. (2) Maintain product supply. An operator may be able to justify a longer reassessment period for a covered segment if the operator demonstrates that it cannot maintain local product supply if it conducts the reassessment within the required interval. (b) How to apply. If one of the conditions specified in paragraph (a) (1) or (a) (2) of this section applies, an operator may seek a waiver of the required reassessment interval. An operator must apply for a waiver in accordance with 49 U.S.C. 60118(c), at least 180 days before the end of the required reassessment interval, unless local product supply issues make the period impractical. If local product supply issues make the period impractical, an operator must apply for the waiver as soon as the need for the waiver becomes known.
15	192—Transportation of Natural and Other Gas	Subpart L, 192.613, pg 458	192.613 Continuing surveillance. (a) Each operator shall have a procedure for continuing surveillance of its facilities to determine and take appropriate action concerning changes in class location, failures, leakage history, corrosion, substantial changes in cathodic protection requirements, and other unusual operating and maintenance conditions. (b) If a segment of pipeline is determined to be in unsatisfactory condition but no immediate hazard exists, the operator shall initiate a program to recondition or phase out the segment involved, or, if the segment cannot be reconditioned or phased out, reduce the maximum allowable operating pressure in accordance with § 192.619 (a) and (b).
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17	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.937, pg 493	192.937 What is a continual process of evaluation and assessment to maintain a pipeline's integrity? (a) General. After completing the baseline integrity assessment of a covered segment, an operator must continue to assess the line pipe of that segment at the intervals specified in § 192.939 and periodically evaluate the integrity of each covered pipeline segment as provided in paragraph (b) of this section. An operator must reassess a covered segment on which a prior assessment is credited as a baseline under § 192.921(e) by no later than December 17, 2009. An operator must reassess a covered segment on which a baseline assessment is conducted during the baseline period specified in § 192.921(d) by no later than seven years after the baseline assessment of that covered segment unless the evaluation under paragraph (b) of this section indicates earlier reassessment. (b) Evaluation. An operator must conduct a periodic evaluation as frequently as needed to assure the integrity of each covered segment. The periodic evaluation must be based on a data integration and risk assessment of the entire pipeline as specified in § 192.917. For plastic transmission pipelines, the periodic evaluation is based on the threat analysis specified in 192.917(d). For all other transmission pipelines, the evaluation must consider the past and present integrity assessment results, data integration and risk assessment information (§ 192.917), and decisions about remediation (§ 192.933) and additional preventive and mitigative actions (§ 192.935). An operator must use the results from this evaluation to identify the threats specific to each covered segment and the risk represented by these threats. (c) Assessment methods. In conducting the integrity reassessment, an operator must assess the integrity of the line pipe in the covered segment by any of the following methods as appropriate for the threats to which the covered segment is susceptible (see § 192.917), or by confirmatory direct assessment under the conditions specified in § 192.931. (1) Internal inspection tool or tools capable of detecting corrosion, and any other threats to which the covered segment is susceptible. An operator must follow ASME/ANSI B31.8S (incorporated by reference, see § 192.7), section 6.2 in selecting the appropriate internal inspection tools for the covered segment. (2) Pressure test conducted in accordance with subpart J of this part. An operator must use the test pressures specified in Table 3 of section 5 of VerDate Mar<15>2010 14:56 Jan 03, 2012 Jkt 223216 PO 00000 Frm 00505 Fmt 8010 Sfmt 8010 Y:\SGML\223216.XXX 223216 wreier-aviles on DSK3TPTVN1PROD with CFR 494 § 192.939 49 CFR Ch. I (10–1–11 Edition) ASME/ANSI B31.8S, to justify an extended reassessment interval in accordance with § 192.939. (3) Direct assessment to address threats of external corrosion, internal corrosion, or stress corrosion cracking. An operator must conduct the direct assessment in accordance with the requirements listed in § 192.923 and with as applicable, the requirements specified in §§ 192.925, 192.927 or 192.929; (4) Other technology that an operator demonstrates can provide an equivalent understanding of the condition of the line pipe. An operator choosing this option must notify the Office of Pipeline Safety (OPS) 180 days before conducting the assessment, in accordance with § 192.949. An operator must also notify a State or local pipeline safety authority when either a covered segment is located in a State where OPS has an interstate agent agreement, or an intrastate covered segment is regulated by that State. (5) Confirmatory direct assessment when used on a covered segment that is scheduled for reassessment at a period longer than seven years. An operator using this reassessment method must comply with § 192.931.
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19	Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.947(c), pg 497	192.947 What records must an operator keep? An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At minimum, an operator must maintain the following records for review during an inspection. ... (c) A written baseline assessment plan in accordance with § 192.919; (d) Documents to support any decision, analysis and process developed and used to implement and evaluate each element of the baseline assessment plan .... Documents include those developed and used in support of any identification, calculation, amendment, modification, justification, deviation and determination made, and any action taken to implement and evaluate any of the program elements;

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22	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.917, pg 483	§192.917 How does an operator identify potential threats to pipeline integrity & use the threat identification in its integrity program? (a) Threat identification. An operator must identify & evaluate all potential threats to each covered pipeline segment. Potential threats that an operator must consider include, but are not limited to, the threats listed in ASME/ANSI B31.8S (incorporated by reference, see §192.7), section 2, which are grouped under the following four categories: (1) Time dependent threats such as internal corrosion, external corrosion, & stress corrosion cracking; (2) Static or resident threats, such as fabrication or construction defects; (3) Time independent threats such as third party damage & outside force damage; & (4) Human error. (b) Data gathering & integration. To identify & evaluate the potential threats to a covered pipeline segment, an operator must gather & integrate existing data & information on the entire pipeline that could be relevant to the covered segment. In performing this data gathering & integration, an operator must follow the requirements in ASME/ANSI B31.8S, section 4. At a minimum, an operator must gather & evaluate the set of data specified in Appendix A to ASME/ANSI B31.8S, & consider both on the covered segment & similar non-covered segments, past incident history, corrosion control records, continuing surveillance records, patrolling records, maintenance history, internal inspection records & all other conditions specific to each pipeline. (c) Risk assessment. An operator must conduct a risk assessment that follows ASME/ANSI B31.8S, section 5, & considers the identified threats for each covered segment. An operator must use the risk assessment to prioritize the covered segments for the baseline & continual reassessments (§§192.919, 192.921, 192.937), & to determine what additional preventive & mitigative measures are needed (§192.935) for the covered segment. (d) Plastic transmission pipeline. An operator of a plastic transmission pipeline must assess the threats to each covered segment using the information in sections 4 & 5 of ASME B31.8S & consider any threats unique to the integrity of plastic pipe. (e) Actions to address particular threats. If an operator identifies any of the following threats, the operator must take the following actions to address the threat. (1) Third party damage. An operator must utilize the data integration required in paragraph (b) of this section and ASME/ANSI B31.8S, Appendix A7 to determine the susceptibility of each covered segment to the threat of third party damage. If an operator identifies the threat of third party damage, the operator must implement comprehensive additional preventive measures in accordance with §192.935 & monitor the effectiveness of the preventive measures. If, in conducting a baseline assessment under §192.921, or a reassessment under §192.937, an operator uses an internal inspection tool or external corrosion direct assessment, the operator must integrate data from these assessments with data related to any encroachment or foreign line crossing on the covered segment, to define where potential indications of third party damage may exist in the covered segment. An operator must also have procedures in its integrity management program addressing actions it will take to respond to findings from this data integration. (2) Cyclic fatigue. An operator must evaluate whether cyclic fatigue or other loading condition (including ground movement, suspension bridge condition) could lead to a failure of a deformation, including a dent or gouge, or other defect in the covered segment. An evaluation must assume the presence of threats in the covered segment that could be exacerbated by cyclic fatigue. An operator must use the results from the evaluation together with the criteria used to evaluate the significance of this threat to the covered segment to prioritize the integrity baseline assessment or reassessment. (3) Manufacturing and construction defects. If an operator identifies the threat of manufacturing and construction defects (including seam defects) in the covered segment, an operator must analyze the covered segment to determine the risk of failure from these defects. The analysis must consider the results of prior assessments on the covered segment. An operator may consider manufacturing & construction related defects to be stable defects if the operating pressure on the covered segment has not increased over the maximum operating pressure experienced during the five years preceding identification of the high consequence area. If any of the following changes occur in the covered segment, an operator must prioritize the covered segment as a high risk segment for the baseline assessment or a subsequent reassessment. (i) Operating pressure increases above the maximum operating pressure experienced during the preceding five years; (ii) MAOP increases; or (iii) The stresses leading to cyclic fatigue increase. (4) ERW pipe. If a covered pipeline segment contains low frequency electric resistance welded pipe (ERW), lap welded pipe or other pipe that satisfies the conditions specified in ASME/ANSI B31.8S, Appendices A4.3 & A4.4, & any covered or noncovered segment in the pipeline system with such pipe has experienced seam failure, or operating pressure on the covered segment has increased over the maximum operating pressure experienced during the preceding five years, an operator must select an assessment technology or technologies with a proven application capable of assessing seam integrity and seam corrosion anomalies. The operator must prioritize the covered segment as a high risk segment for the baseline assessment or a subsequent reassessment. (5) Corrosion. If an operator identifies corrosion on a covered pipeline segment that could adversely affect the integrity of the line (conditions specified in § 192.933), the operator must evaluate and remediate, as necessary, all pipeline segments (both covered & non-covered) with similar material coating & environmental characteristics. An operator must establish a schedule for evaluating & remediating, as necessary, the similar segments that is consistent with the operator's established operating & maintenance procedures under part 192 for testing & repair.
23	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum	Subpart O, 192.947(b), pg 497	192.947 What records must an operator keep? An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At minimum, an operator must maintain the following records for review during an inspection. ...(b) Documents supporting the threat identification and risk assessment in accordance with § 192.917; ...
24	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal	Subpart O, 192.919, pg 484	192.919 What must be in the baseline assessment plan? An operator must include each of the following elements in its written baseline assessment plan: (a) Identification of the potential threats to each covered pipeline segment and the information supporting the threat identification. (See § 192.917.); (b) The methods selected to assess the integrity of the line pipe, including an explanation of why the assessment method was selected to address the identified threats to each covered segment. The integrity assessment method an operator uses must be based on the threats identified to the covered segment. (See § 192.917.) More than one method may be required to address all the threats to the covered pipeline segment; (c) A schedule for completing the integrity assessment of all covered segments, including risk factors considered in establishing the assessment schedule; (d) If applicable, a direct assessment plan that meets the requirements of §§ 192.923, and depending on the threat to be addressed, of § 192.925, § 192.927, or § 192.929; and (e) A procedure to ensure that the baseline assessment is being conducted in a manner that minimizes environmental and safety risks.

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25	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.921, pg 484	192.921 How is the baseline assessment to be conducted? (a) Assessment methods. An operator must assess the integrity of the line pipe in each covered segment by applying one or more of the following methods depending on the threats to which the covered segment is susceptible. An operator must select the method or methods best suited to address the threats identified to the covered segment (See § 192.917). (1) Internal inspection tool or tools capable of detecting corrosion, and any other threats to which the covered segment is susceptible. An operator must follow ASME/ANSI B31.8S (incorporated by reference, see § 192.7), section 6.2 in selecting the appropriate internal inspection tools for the covered segment. (2) Pressure test conducted in accordance with subpart J of this part. An operator must use the test pressures specified in Table 3 of section 5 of ASME/ANSI B31.8S, to justify an extended reassessment interval in accordance with § 192.939. (3) Direct assessment to address threats of external corrosion, internal corrosion, and stress corrosion cracking. An operator must conduct the direct assessment in accordance with the requirements listed in § 192.923 and with, as applicable, the requirements specified in §§ 192.925, 192.927 or 192.929; (4) Other technology that an operator demonstrates can provide an equivalent understanding of the condition of the line pipe. An operator choosing this option must notify the Office of Pipeline Safety (OPS) 180 days before conducting the assessment, in accordance with § 192.949. An operator must also notify a State or local pipeline safety authority when either a covered segment is located in a State where OPS has an interstate agent agreement, or an intrastate covered segment is regulated by that State. (b) Prioritizing segments. An operator must prioritize the covered pipeline segments for the baseline assessment according to a risk analysis that considers the potential threats to each covered segment. The risk analysis must comply with the requirements in § 192.917. (c) Assessment for particular threats. In choosing an assessment method for the baseline assessment of each covered segment, an operator must take the actions required in § 192.917(e) to address particular threats that it has identified. (d) Time period. An operator must prioritize all the covered segments for assessment in accordance with § 192.917 (c) and paragraph (b) of this section. An operator must assess at least 50% of the covered segments beginning with the highest risk segments, by December 17, 2007. An operator must complete the baseline assessment of all covered segments by December 17, 2012. (e) Prior assessment. An operator may use a prior integrity assessment conducted before December 17, 2002 as a baseline assessment for the covered segment, if the integrity assessment meets the baseline requirements in this subpart and subsequent remedial actions to address the conditions listed in § 192.933 have been carried out. In addition, if an operator uses this prior assessment as its baseline assessment, the operator must reassess the line pipe in the covered segment according to the requirements of § 192.937 and § 192.939. (f) Newly identified areas. When an operator identifies a new high consequence area (see § 192.905), an operator must complete the baseline assessment of the line pipe in the newly identified high consequence area within ten (10) years from the date the area is identified. (g) Newly installed pipe. An operator must complete the baseline assessment of a newly-installed segment of pipe covered by this subpart within ten (10) VerDate Mar<15>2010 14:56 Jan 03, 2012 Jkt 223216 PO 00000 Frm 00497 Fmt 8010 Sfmt 8010 Y:\SGML\223216.XXX 223216 wreier-aviles on DSK3TPTVN1PROD with CFR 486 § 192.923 49 CFR Ch. I (10–1–11 Edition) years from the date the pipe is installed. An operator may conduct a pressure test in accordance with paragraph (a)(2) of this section, to satisfy the requirement for a baseline assessment. (h) Plastic transmission pipeline. If the threat analysis required in § 192.917(d) on a plastic transmission pipeline indicates that a covered segment is susceptible to failure from causes other than third-party damage, an operator must conduct a baseline assessment of the segment in accordance with the requirements of this section and of § 192.917. The operator must justify the use of an alternative assessment method that will address the identified threats to the covered segment.
26	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (c)(1), Pg. 17	(NOTE: Section 60109 refers to pipelines in high-density population areas and environmentally sensitive areas) (c) Risk Analysis and Integrity Management Programs.— (1) Requirement.— Each operator of a gas pipeline facility shall conduct an analysis of the risks to each facility of the operator located in an area identified pursuant to subsection (a)(1) and defined in chapter 192 of title 49, Code of Federal Regulations, including any subsequent modifications, and shall adopt and implement a written integrity management program for such facility to reduce the risks.
27	Title 49 - US Code - Chapter 601 - Safety	Section 60126 (a,e), Pg. 36	(a) Risk Management Program Demonstration Projects.— (1) In general.— The Secretary shall establish risk management demonstration projects (A) to demonstrate, through the voluntary participation by owners and operators of gas pipeline facilities and hazardous liquid pipeline facilities, the application of risk management; and (B) to evaluate the safety and cost-effectiveness of the program. .... (e) Report.— ... the Secretary shall transmit to the Congress a report on the results of the demonstration projects carried out under this section that includes (1) an evaluation of each such demonstration project, including an evaluation of the performance of each participant in that project with respect to safety and environmental protection; and (2) recommendations concerning whether the applications of risk management demonstrated under the demonstration project should be incorporated into the Federal pipeline safety program under this chapter on a permanent basis.

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28	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.935(a), pg 492	192.935 What additional preventive and mitigative measures must an operator take? (a) General requirements. An operator must take additional measures beyond those already required by Part 192 to prevent a pipeline failure and to mitigate the consequences of a pipeline failure in a high consequence area. An operator must base the additional measures on the threats the operator has identified to each pipeline segment. (See § 192.917) An operator must conduct, in accordance with one of the risk assessment approaches in ASME/ ANSI B31.8S (incorporated by reference, see § 192.7), section 5, a risk analysis of its pipeline to identify additional measures to protect the high consequence area and enhance public safety. Such additional measures include, but are not limited to, installing Automatic Shut-off Valves or Remote Control Valves, installing computerized monitoring and leak detection systems, replacing pipe segments with pipe of heavier wall thickness, providing additional training to personnel on response procedures, conducting drills with local emergency responders and implementing additional inspection and maintenance programs. ....
29	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 e, pg 591	195.452 Pipeline integrity management in high consequence areas. ... (e) What are the risk factors for establishing an assessment schedule (for both the baseline and continual integrity assessments)? (1) An operator must establish an integrity assessment schedule that prioritizes pipeline segments for assessment (see paragraphs (d)(1) and (j)(3) of this section). An operator must base the assessment schedule on all risk factors that reflect the risk conditions on the pipeline segment. The factors an operator must consider include, but are not limited to: (i) Results of the previous integrity assessment, defect type and size that the assessment method can detect, and defect growth rate; (ii) Pipe size, material, manufacturing information, coating type and condition, and seam type; (iii) Leak history, repair history and cathodic protection history; (iv) Product transported; (v) Operating stress level; (vi) Existing or projected activities in the area; (vii) Local environmental factors that could affect the pipeline (e.g., corrosivity of soil, subsidence, climatic); (viii) geo-technical hazards; and (ix) Physical support of the segment such as by a cable suspension bridge. (2) Appendix C of this part provides further guidance on risk factors.
30	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 (i)(1,2), pg 593	195.452 Pipeline integrity management in high consequence areas. ... (i) What preventive and mitigative measures must an operator take to protect the high consequence area?—(1) General requirements. An operator must take measures to prevent and mitigate the consequences of a pipeline failure that could affect a high consequence area. These measures include conducting a risk analysis of the pipeline segment to identify additional actions to enhance public safety or environmental protection. Such actions may include, but are not limited to, implementing damage prevention best practices, better monitoring of cathodic protection where corrosion is a concern, establishing shorter inspection intervals, installing EFRDs on the pipeline segment, modifying the systems that monitor pressure and detect leaks, providing additional training to personnel on response procedures, conducting drills with local emergency responders and adopting other management controls. (2) Risk analysis criteria. In identifying the need for additional preventive and mitigative measures, an operator must evaluate the likelihood of a pipeline release occurring and how a release could affect the high consequence area. This determination must consider all relevant risk factors, including, but not limited to: (i) Terrain surrounding the pipeline segment, including drainage systems such as small streams and other smaller waterways that could act as a conduit to the high consequence area; (ii) Elevation profile; (iii) Characteristics of the product transported; (iv) Amount of product that could be released; (v) Possibility of a spillage in a farm field following the drain tile into a waterway; (vi) Ditches along side a roadway the pipeline crosses; (vii) Physical support of the pipeline segment such as by a cable suspension bridge; (viii) Exposure of the pipeline to operating pressure exceeding established maximum operating pressure. ...
31	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 i, pg 593	195.452 Pipeline integrity management in high consequence areas. ... (i) What preventive and mitigative measures must an operator take to protect the high consequence area?—....(3) Leak detection. An operator must have a means to detect leaks on its pipeline system. An operator must evaluate the capability of its leak detection means and modify, as necessary, to protect the high consequence area. An operator's evaluation must, at least, consider, the following factors—length and size of the pipeline, type of product carried, the pipeline's proximity to the high consequence area, the swiftness of leak detection, location of nearest response personnel, leak history, and risk assessment results. (4) Emergency Flow Restricting Devices (EFRD). If an operator determines that an EFRD is needed on a pipeline segment to protect a high consequence area in the event of a hazardous liquid pipeline release, an operator must install the EFRD. In making this determination, an operator must, at least, consider the following factors—the swiftness of leak detection and pipeline shutdown capabilities, the type of commodity carried, the rate of potential leakage, the volume that can be released, topography or pipeline profile, the potential for ignition, proximity to power sources, location of nearest response personnel, specific terrain between the pipeline segment and the high consequence area, and benefits expected by reducing the spill size.
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33	Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.705, pg 470	192.705 Transmission lines: Patrolling. (a) Each operator shall have a patrol program to observe surface conditions on and adjacent to the transmission line right-of-way for indications of leaks, construction activity, and other factors affecting safety and operation. (b) The frequency of patrols is determined by the size of the line, the operating pressures, the class location, terrain, weather, and other relevant factors, but intervals between patrols may not be longer than prescribed in the following table: Maximum interval between patrols Class location of line At highway and railroad crossings At all other places 1, 2 ..... 7½ months; but at least twice each calendar year. 15 months; but at least once each calendar year. 3 ..... 4½ months; but at least four times each calendar year. 7½ months; but at least twice each calendar year. 4 ..... 4½ months; but at least four times each calendar year. 4½ months; but at least four times each calendar year. (c) Methods of patrolling include walking, driving, flying or other appropriate means of traversing the right-ofway.
34	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.412, pg 582	195.412 Inspection of rights-of-way and crossings under navigable waters. (a) Each operator shall, at intervals not exceeding 3 weeks, but at least 26 times each calendar year, inspect the surface conditions on or adjacent to each pipeline right-of-way. Methods of inspection include walking, driving, flying or other appropriate means of traversing the right-of-way. (b) Except for offshore pipelines, each operator shall, at intervals not exceeding 5 years, inspect each crossing under a navigable waterway to determine the condition of the crossing.
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38	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.402 a,b, pg 578	195.402 Procedural manual for operations, maintenance.... (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations.... This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted. (b) The Administrator or the State Agency that has submitted a current certification under the pipeline safety laws (49 U.S.C. 60101 et seq.) with respect to the pipeline facility governed by an operator's plans and procedures may, after notice and opportunity for hearing as provided in 49 CFR 190.237 or the relevant State procedures, require the operator to amend its plans and procedures as necessary to provide a reasonable level of safety.
39	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.402 c, pg 579	(c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations: (1) Making construction records, maps, and operating history available as necessary for safe operation and maintenance. (2) Gathering of data needed for reporting accidents under subpart B of this part in a timely and effective manner. (3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part. (4) Determining which pipeline facilities are located in areas that would require an immediate response by the operator to prevent hazards to the public if the facilities failed or malfunctioned. (5) Analyzing pipeline accidents to determine their causes. (6) Minimizing the potential for hazards identified under paragraph (c)(4) of this section and the possibility of recurrence of accidents analyzed under paragraph (c)(5) of this section. (7) Starting up and shutting down any part of the pipeline system in a manner designed to assure operation within the limits prescribed by § 195.406, consider the hazardous liquid or carbon dioxide in transportation, variations in altitude along the pipeline, and pressure monitoring and control devices. (8) In the case of a pipeline that is not equipped to fail safe, monitoring from an attended location pipeline pressure during startup until steady state pressure and flow conditions are reached and during shut-in to assure operation within limits prescribed by § 195.406. (9) In the case of facilities not equipped to fail safe that are identified under paragraph 195.402(c)(4) or that control receipt and delivery of the hazardous liquid or carbon dioxide, detecting abnormal operating conditions by monitoring pressure, temperature, flow or other appropriate operational data and transmitting this data to an attended location. (10) Abandoning pipeline facilities, including safe disconnection from an operating pipeline system, purging of combustibles, and sealing abandoned facilities left in place to minimize safety and environmental hazards. For each abandoned offshore pipeline facility or each abandoned onshore pipeline facility that crosses over, under or through commercially navigable waterways the last operator of that facility must file a report upon abandonment of that facility in accordance with § 195.59 of this part. (11) Minimizing the likelihood of accidental ignition of vapors in areas near facilities identified under paragraph (c)(4) of this section where the potential exists for the presence of flammable liquids or gases. (12) Establishing and maintaining liaison with fire, police, and other appropriate public officials to learn the responsibility and resources of each government organization that may respond to a hazardous liquid or carbon dioxide pipeline emergency and acquaint the officials with the operator's ability in responding to a hazardous liquid or carbon dioxide pipeline emergency and means of communication. (13) Periodically reviewing the work done by operator personnel to determine the effectiveness of the procedures used in normal operation and maintenance and taking corrective action where deficiencies are found. (14) Taking adequate precautions in excavated trenches to protect personnel from the hazards of unsafe accumulations of vapor or gas, and making available when needed at the excavation, emergency rescue equipment, including a breathing apparatus and, a rescue harness and line. (15) Implementing the applicable control room management procedures required by § 195.446.
40	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.402 d, pg 579	(d) Abnormal operation. The manual required by paragraph (a) of this section must include procedures for the following to provide safety when operating design limits have been exceeded: (1) Responding to, investigating, and correcting the cause of: (i) Unintended closure of valves or shutdowns; (ii) Increase or decrease in pressure or flow rate outside normal operating limits; (iii) Loss of communications; (iv) Operation of any safety device; (v) Any other malfunction of a component, deviation from normal operation, or personnel error which could cause a hazard to persons or property. (2) Checking variations from normal operation after abnormal operation has ended at sufficient critical locations in the system to determine continued integrity and safe operation. (3) Correcting variations from normal operation of pressure and flow equipment and controls. (4) Notifying responsible operator personnel when notice of an abnormal operation is received. (5) Periodically reviewing the response of operator personnel to determine the effectiveness of the procedures controlling abnormal operation and taking corrective action where deficiencies are found.

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41	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.605 (a), pg 454	192.605 Procedural manual for operations, maintenance,.... (a) General. Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities .... For transmission lines, the manual must also include procedures for handling abnormal operations. This manual must be reviewed and updated by the operator at intervals not exceeding 15 months, but at least once each calendar year. This manual must be prepared before operations of a pipeline system commence. Appropriate parts of the manual must be kept at locations where operations and maintenance activities are conducted.
42	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.605 (b) (1,3,8,9,12), pg 454	192.605 (b) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following, if applicable, to provide safety during maintenance and operations. (1) Operating, maintaining, and repairing the pipeline in accordance with each of the requirements of this subpart and subpart M of this part. .... (3) Making construction records, maps, and operating history available to appropriate operating personnel. ....(8) Periodically reviewing the work done by operator personnel to determine the effectiveness, and adequacy of the procedures used in normal operation and maintenance and modifying the procedures when deficiencies are found. (9) Taking adequate precautions in excavated trenches to protect personnel from the hazards of unsafe accumulations of vapor or gas, and making available when needed at the excavation, emergency rescue equipment, including a breathing apparatus and, a rescue harness and line. ... (12) Implementing the applicable control room management procedures required by § 192.631.
43	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.605 (c-e), pg 454	192.605 (c) Abnormal operation. For transmission lines, the manual required by paragraph (a) of this section must include procedures for the following to provide safety when operating design limits have been exceeded: (1) Responding to, investigating, and correcting the cause of: (i) Unintended closure of valves or shutdowns; (ii) Increase or decrease in pressure or flow rate outside normal operating limits; (iii) Loss of communications; (iv) Operation of any safety device; and (v) Any other foreseeable malfunction of a component, deviation from normal operation, or personnel error, which may result in a hazard to persons or property. (2) Checking variations from normal operation after abnormal operation has ended at sufficient critical locations in the system to determine continued integrity and safe operation. (3) Notifying responsible operator personnel when notice of an abnormal operation is received. (4) Periodically reviewing the response of operator personnel to determine the effectiveness of the procedures controlling abnormal operation and taking corrective action where deficiencies are found. (5) The requirements of this paragraph (c) do not apply to natural gas distribution operators that are operating transmission lines in connection with their distribution system. (d) Safety-related condition reports. The manual required by paragraph (a) of this section must include instructions enabling personnel who perform operation and maintenance activities to recognize conditions that potentially may be safety-related conditions that are subject to the reporting requirements of § 191.23 of this subchapter. (e) Surveillance, emergency response, and accident investigation. The procedures required by §§ 192.613(a), 192.615, and 192.617 must be included in the manual required by paragraph (a) of this section.
44	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.3, pg 37	6.3 PIPELINE OPERATION AND CONTROL 6.3.1 General Pipeline operation and control shall be continually monitored while the pipeline is in operation to ensure that pipeline structural integrity is maintained. The pipeline shall be operated in accordance with the following: (a) Operate a pipeline only when it conveys the fluid or fluids under the conditions (including subsequent changes) for which it was designed, constructed, tested, and approved. (b) Ensure that during normal operation, the overpressure control system is in place to ensure the operating pressure, at any point in the pipeline, does not exceed the MAOP, in accordance with AS 2885.1, and that transient pressure does not exceed 110% of the MAOP. (c) Ensure that the operating temperature is such that the coating temperature rating and the thermal stress limits used in the pipeline design are not exceeded. (d) Ensure that operating conditions are assessed and mitigate the likelihood of stress corrosion cracking initiation or growth. 6.3.2 Operating parameters Operating parameters shall be established and communicated to enable pipeline control personnel to operate within desired limits, and the pipeline shall be operated within these limits. Operating parameters and alarm limits established for SCADA systems shall have appropriate change control measures in place. The Licensee shall regularly review the adequacy of operating and maintenance procedures as referenced in the pipeline management system.

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45	Title 49 - US Code - Chapter 601 - Safety	Section 60103 (d), Pg. 9	(d) Operation and Maintenance Standards.— The Secretary of Transportation shall prescribe minimum operating and maintenance standards for a liquefied natural gas pipeline facility. In prescribing a standard, the Secretary shall consider (1) the conditions, features, and type of equipment and structures that make up or are used in connection with the facility; (2) the fire prevention and containment equipment at the facility; (3) security measures to prevent an intentional act that could cause a liquefied natural gas accident; (4) maintenance procedures and equipment; (5) the training of personnel in matters specified by this subsection; and (6) other factors and conditions related to the safe handling of liquefied natural gas.
46	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.401(a), pg 577	Subpart F—Operation and Maintenance § 195.401 General requirements (a) No operator may operate or maintain its pipeline systems at a level of safety lower than that required by this subpart and the procedures it is required to establish under § 195.402(a) of this subpart.
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51	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.627, pg 467	192.627 Tapping pipelines under pressure. Each tap made on a pipeline under pressure must be performed by a crew qualified to make hot taps
52	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.629, pg 467	192.629 Purging of pipelines. (a) When a pipeline is being purged of air by use of gas, the gas must be released into one end of the line in a moderately rapid and continuous flow. If gas cannot be supplied in sufficient quantity to prevent the formation of a hazardous mixture of gas and air, a slug of inert gas must be released into the line before the gas. (b) When a pipeline is being purged of gas by use of air, the air must be released into one end of the line in a moderately rapid and continuous flow. If air cannot be supplied in sufficient quantity to prevent the formation of a hazardous mixture of gas and air, a slug of inert gas must be released into the line before the air.

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53	Part 192—Transportation of Natural and Other Gas by	Subpart M, 192.751, pg 476	192.751 Prevention of accidental ignition. Each operator shall take steps to minimize the danger of accidental ignition of gas in any structure or area where the presence of gas constitutes a hazard of fire or explosion, including the following: (a) When a hazardous amount of gas is being vented into open air, each potential source of ignition must be removed from the area and a fire extinguisher must be provided. (b) Gas or electric welding or cutting may not be performed on pipe or on pipe components that contain a combustible mixture of gas and air in the area of work. (c) Post warning signs, where appropriate.
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55	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart B, Section 195.64(a,b), pg 562	§195.64 National Registry of Pipeline and LNG Operators. (a) OPID Request. Effective January 1, 2012, each operator of a hazardous liquid pipeline or pipeline facility must obtain from PHMSA an Operator Identification Number (OPID). An OPID is assigned to an operator for the pipeline or pipeline system for which the operator has primary responsibility. To obtain an OPID or a change to an OPID, an operator must complete an OPID Assignment Request DOT Form PHMSA F 1000.1 through the National Registry of Pipeline and LNG Operators in accordance with § 195.58. (b) OPID validation. An operator who has already been assigned one or more OPID by January 1, 2011 must validate the information associated with each such OPID through the National Registry of Pipeline and LNG Operators at http://opsweb.phmsa.dot.gov, and correct that information as necessary, no later than June 30, 2012.
56	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart B, Section 195.64(c), pg 562	§195.64 National Registry of Pipeline and LNG Operators. ... (c) Changes. Each operator must notify PHMSA electronically through the National Registry of Pipeline and LNG Operators at http:// opsweb.phmsa.dot.gov, of certain events. (1) An operator must notify PHMSA of any of the following events not later than 60 days before the event occurs: (i) Construction or any planned rehabilitation, replacement, modification, upgrade, uprate, or update of a facility, other than a section of line pipe, that costs $10 million or more. If 60 day notice is not feasible because of an emergency, an operator must notify PHMSA as soon as practicable; ... . (2) An operator must notify PHMSA of any following event not later than 60 days after the event occurs: (i) A change in the primary entity responsible (i.e., with an assigned OPID) for managing or administering a safety program required by this part covering pipeline facilities operated under multiple OPIDs. (ii) A change in the name of the operator; (iii) A change in the entity (e.g., company, municipality) responsible for operating an existing pipeline, pipeline segment, or pipeline facility; (iv) The acquisition or divestiture of 50 or more miles of pipeline or pipeline system subject to this part; or (v) The acquisition or divestiture of an existing pipeline facility subject to this part. (d) Reporting. An operator must use the OPID issued by PHMSA for all reporting requirements covered under this subchapter and for submissions to the National Pipeline Mapping System

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58	195—Transportation of	Subpart A, Section195.4, Pg 551	§ 195.4 Compatibility necessary for transportation of hazardous liquids or carbon dioxide. No person may transport any hazardous liquid or carbon dioxide unless the hazardous liquid or carbon dioxide is chemically compatible with both the pipeline, including all components, and any other commodity that it may come into contact with while in the pipeline
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66	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.424, pg 583	195.424 Pipe movement. (a) No operator may move any line pipe, unless the pressure in the line section involved is reduced to not more than 50 percent of the maximum operating pressure. (b) No operator may move any pipeline containing highly volatile liquids where materials in the line section involved are joined by welding unless— (1) Movement when the pipeline does not contain highly volatile liquids is impractical; (2) The procedures of the operator under § 195.402 contain precautions to protect the public against the hazard in moving pipelines containing highly volatile liquids, including the use of warnings, where necessary, to evacuate the area close to the pipeline; and (3) The pressure in that line section is reduced to the lower of the following: (i) Fifty percent or less of the maximum operating pressure; or (ii) The lowest practical level that will maintain the highly volatile liquid in a liquid state with continuous flow, but not less than 50 p.s.i. (345 kPa) gage above the vapor pressure of the commodity. (c) No operator may move any pipeline containing highly volatile liquids where materials in the line section involved are not joined by welding unless— (1) The operator complies with paragraphs (b) (1) and (2) of this section; and (2) That line section is isolated to prevent the flow of highly volatile liquid.
67	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 d, pg 590	195.452 Pipeline integrity management in high consequence areas. ....(d) When must operators complete baseline assessments? Operators must complete baseline assessments as follows: . .....(3) Newly-identified areas. (i) When information is available from the information analysis (see paragraph (g) of this section), or from Census Bureau maps, that the population density around a pipeline segment has changed so as to fall within the definition in § 195.450 of a high population area or other populated area, the operator must incorporate the area into its baseline assessment plan as a high consequence area within one year from the date the area is identified. An operator must complete the baseline assessment of any line pipe that could affect the newly-identified high consequence area within five years from the date the area is identified. .....
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69	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.619, pg 461	192.619 Maximum allowable operating pressure: Steel or plastic pipelines. (a) No person may operate a segment of steel or plastic pipeline at a pressure that exceeds a maximum allowable operating pressure determined under paragraph (c) or (d) of this section, or the lowest of the following: (1) The design pressure of the weakest element in the segment, determined in accordance with subparts C and D of this part. However, for steel pipe in pipelines being converted under § 192.14 or uprated under subpart K of this part, if any variable necessary to determine the design pressure under the design formula (§ 192.105) is unknown, one of the following pressures is to be used as design pressure: ..... (2) The pressure obtained by dividing the pressure to which the segment was tested after construction as follows: ..... (3) The highest actual operating pressure to which the segment was subjected during the 5 years preceding the applicable date in the second column..... (4) The pressure determined by the operator to be the maximum safe pressure after considering the history of the segment, particularly known corrosion and the actual operating pressure. (b) No person may operate a segment to which paragraph (a)(4) of this section is applicable, unless over-pressure protective devices are installed on the segment in a manner that will prevent the maximum allowable operating pressure from being exceeded, in accordance with § 192.195. (c) The requirements on pressure restrictions in this section do not apply in the following instance. An operator may operate a segment of pipeline found to be in satisfactory condition, considering its operating and maintenance history, at the highest actual operating pressure to which the segment was subjected during the 5 years preceding the applicable date in the second column of the table in paragraph (a)(3) of this section. An operator must still comply with § 192.611. (d) The operator of a pipeline segment of steel pipeline meeting the conditions prescribed in § 192.620(b) may elect to operate the segment at a maximum allowable operating pressure determined under § 192.620(a).

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70	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.620, pg 462	§ 192.620 Alternative maximum allowable operating pressure for certain steel pipelines. (a) How does an operator calculate the alternative maximum allowable operating pressure? .....(b) When may an operator use the alternative maximum allowable operating pressure calculated under paragraph (a) of this section? ..... (c) What is an operator electing to use the alternative maximum allowable operating pressure required to do? ..... (d) What additional operation and maintenance requirements apply to operation at the alternative maximum allowable operating pressure? In addition to compliance with other applicable safety standards in this part, if an operator establishes a maximum allowable operating pressure for a pipeline segment under paragraph (a) of this section, an operator must comply with the additional operation and maintenance requirements as follows: *(NOTE: TABLE)* To address increased risk of a maximum allowable operating pressure based on higher stress levels in the following areas: Take the following additional step: (1) Identifying and evaluating threats. ..... (2) Notifying the public ..... (3) Responding to an emergency in an area defined as a high consequence area in § 192.903....(4) Protecting the right-of-way .... (5) Controlling internal corrosion. .... (6) Controlling interference that can impact external corrosion. ..... (7) Confirming external corrosion control through indirect assessment. .... (8) Controlling external corrosion through cathodic protection. ..... (9) Conducting a baseline assessment of integrity. ..... (10) Conducting periodic assessments of integrity. .....(11) Making repairs .... *(END OF TABLE)* (e) Is there any change in overpressure protection associated with operating at the alternative maximum allowable operating pressure? ...
71	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.406, pg 581	195.406 Maximum operating pressure. (a) Except for surge pressures and other variations from normal operations, no operator may operate a pipeline at a pressure that exceeds any of the following: (1) The internal design pressure of the pipe determined in accordance with § 195.106. However, for steel pipe in pipelines being converted under § 195.5, if one or more factors of the design formula (§ 195.106) are unknown, one of the following pressures is to be used as design pressure: (i) Eighty percent of the first test pressure that produces yield under section N5.0 of appendix N of ASME B31.8, reduced by the appropriate factors in §§ 195.106 (a) and (e); or (ii) If the pipe is 12 3⁄4 inch (324 mm) or less outside diameter and is not tested to yield under this paragraph, 200 p.s.i. (1379 kPa) gage. (2) The design pressure of any other component of the pipeline. (3) Eighty percent of the test pressure for any part of the pipeline which has been pressure tested under subpart E of this part. (4) Eighty percent of the factory test pressure or of the prototype test pressure for any individually installed component which is excepted from testing under § 195.305. (5) For pipelines under §§ 195.302(b)(1) and (b)(2)(i) that have not been pressure tested under subpart E of this part, 80 percent of the test pressure or highest operating pressure to which the pipeline was subjected for 4 or more continuous hours that can be demonstrated by recording charts or logs made at the time the test or operations were conducted. (b) No operator may permit the pressure in a pipeline during surges or other variations from normal operations to exceed 110 percent of the operating pressure limit established under paragraph (a) of this section. Each operator must provide adequate controls and protective equipment to control the pressure within this limit.
72	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart E, Section 195.302, pg 573	Subpart E—Pressure Testing ..... § 195.302 General requirements. (a) Except as otherwise provided in this section and in § 195.305(b), ...no operator may return to service a segment of pipeline that has been replaced, relocated, or otherwise changed until it has been pressure tested under this subpart without leakage. ...
73	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart E, Section 195.303, pg 574	195.303 Risk-based alternative to pressure testing older hazardous liquid and carbon dioxide pipelines. (a) An operator may elect to follow a program for testing a pipeline on riskbased criteria as an alternative to the pressure testing in § 195.302(b)(1)(i)–(iii) and § 195.302(b)(2)(i) of this subpart. Appendix B provides guidance on how this program will work. An operator electing such a program shall assign a risk classification to each pipeline segment according to the indicators described in paragraph (b) of this section as follows: ..... (b) An operator shall evaluate each pipeline segment in the program according to the following indicators of risk: .... (c) The program under paragraph (a) of this section shall provide for pressure testing for a segment constructed of electric resistance-welded (ERW) pipe and lapwelded pipe manufactured prior to 1970 susceptible to longitudinal seam failures as determined through paragraph (d) of this section. The timing of such pressure test may be determined based on risk classifications discussed under paragraph (b) of this section. For other segments, the program may provide for use of a magnetic flux leakage or ultrasonic internal inspection survey as an alternative to pressure testing and, in the case of such segments in Risk Classification A, may provide for no additional measures under this subpart. (d) All pre-1970 ERW pipe and lapwelded pipe is deemed susceptible to longitudinal seam failures unless an engineering analysis shows otherwise. In conducting an engineering analysis an operator must consider .....(e) Pressure testing done under this section must be conducted in accordance with this subpart. Except for segments in Risk Classification B which are not constructed with pre-1970 ERW pipe, water must be the test medium. .....(g) An operator must review the risk classifications for those pipeline segments which have not yet been tested under paragraph (a) of this section or otherwise inspected under paragraph (c) of this section at intervals not to exceed 15 months. If the risk classification of an untested or uninspected segment changes, an operator must take appropriate action within two years, or establish the maximum operating pressure under § 195.406(a)(5). (h) An operator must maintain records establishing compliance with this section, including records verifying the risk classifications, the plans and schedule for testing, the conduct of the testing, and the review of the risk classifications. (i) An operator may discontinue a program under this section only after written notification to the Administrator and approval, if needed, of a schedule for pressure testing.
74	Part 192—Transportation of Natural and Other Gas	Subpart J, 192.503, pg 449	192.503 General requirements. (a) No person may operate a new segment of pipeline, or return to service a segment of pipeline that has been relocated or replaced, until— (1) It has been tested in accordance with this subpart and § 192.619 to substantiate the maximum allowable operating pressure; and (2) Each potentially hazardous leak has been located and eliminated.

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79	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart K, 192.553, pg 452	192.553 General requirements. (a) Pressure increases. Whenever the requirements of this subpart require that an increase in operating pressure be made in increments, the pressure must be increased gradually, at a rate that can be controlled, and in accordance with the following: (1) At the end of each incremental increase, the pressure must be held constant while the entire segment of pipeline that is affected is checked for leaks. (2) Each leak detected must be repaired before a further pressure increase is made, except that a leak determined not to be potentially hazardous need not be repaired, if it is monitored during the pressure increase and it does not become potentially hazardous. (b) Records. Each operator who uprates a segment of pipeline shall retain for the life of the segment a record of each investigation required by this subpart, of all work performed, and of each pressure test conducted, in connection with the uprating. (c) Written plan. Each operator who uprates a segment of pipeline shall establish a written procedure that will ensure that each applicable requirement of this subpart is complied with. (d) Limitation on increase in maximum allowable operating pressure. Except as provided in § 192.555(c), a new maximum allowable operating pressure established under this subpart may not exceed the maximum that would be allowed under §§ 192.619 and 192.621 for a new segment of pipeline constructed of the same materials in the same location. However, when uprating a steel pipeline, if any variable necessary to determine the design pressure under the design formula (§ 192.105) is unknown, the MAOP may be increased as provided in § 192.619(a)(1).
80	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart K, 192.557, pg 452	192.557 Uprating: Steel pipelines to a pressure that will produce a hoop stress less than 30 percent of SMYS: plastic, cast iron, and ductile iron pipelines. (a) Unless the requirements of this section have been met, no person may subject: (1) A segment of steel pipeline to an operating pressure that will produce a hoop stress less than 30 percent of SMYS and that is above the previously established maximum allowable operating pressure; or (2) A plastic, cast iron, or ductile iron pipeline segment to an operating pressure that is above the previously established maximum allowable operating pressure. (b) Before increasing operating pressure above the previously established maximum allowable operating pressure, the operator shall: (1) Review the design, operating, and maintenance history of the segment of pipeline; (2) Make a leakage survey (if it has been more than 1 year since the last survey) and repair any leaks that are found, except that a leak determined not to be potentially hazardous need not be repaired, if it is monitored during the pressure increase and it does not become potentially hazardous; (3) Make any repairs, replacements, or alterations in the segment of pipeline that are necessary for safe operation at the increased pressure; (4) Reinforce or anchor offsets, bends and dead ends in pipe joined by compression couplings or bell and spigot joints to prevent failure of the pipe joint, if the offset, bend, or dead end is exposed in an excavation; (5) Isolate the segment of pipeline in which the pressure is to be increased from any adjacent segment that will continue to be operated at a lower pressure; and (6) If the pressure in mains or service lines, or both, is to be higher than the pressure delivered to the customer, install a service regulator on each service line and test each regulator to determine that it is functioning. Pressure may be increased as necessary to test each regulator, after a regulator has been installed on each pipeline subject to the increased pressure. (c) After complying with paragraph (b) of this section, the increase in maximum allowable operating pressure must be made in increments that are equal to 10 p.s.i. (69 kPa) gage or 25 percent of the total pressure increase, whichever produces the fewer number of increments. Whenever the requirements of paragraph (b)(6) of this section apply, there must be at least two approximately equal incremental increases. .....

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85	Title 49 - US Code - Chapter 601 - Safety	Section 60102 (j), Pg. 7	(j) Emergency Flow Restricting Devices.— ... (2) Not later than 2 years after the survey and assessment are completed, the Secretary shall prescribe standards on the circumstances under which an operator of a hazardous liquid pipeline facility must use an emergency flow restricting device or other procedure, system, or equipment described in paragraph (1) of this subsection on the facility. (3) Remotely controlled valves.—...(B) Not later than one year after the survey and assessment are completed, if the Secretary has determined that the use of remotely controlled valves is technically and economically feasible and would reduce risks associated with a rupture of an interstate natural gas pipeline facility, the Secretary shall prescribe standards under which an operator of an interstate natural gas pipeline facility must use a remotely controlled valve. These standards shall include, but not be limited to, requirements for highdensity population areas.
86	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.935(c), pg 492	192.935 What additional preventive and mitigative measures must an operator take? .... (c) Automatic shut-off valves (ASV) or Remote control valves (RCV). If an operator determines, based on a risk analysis, that an ASV or RCV would be an efficient means of adding protection to a high consequence area in the event of a gas release, an operator must install the ASV or RCV. In making that determination, an operator must, at least, consider the following factors—swiftness of leak detection and pipe shutdown capabilities, the type of gas being transported, operating pressure, the rate of potential release, pipeline profile, the potential for ignition, and location of nearest response personnel. (d) Pipelines operating below 30% SMYS. An operator of a transmission pipeline operating below 30% SMYS located in a high consequence area must follow the requirements in paragraphs (d)(1) and (d)(2) of this section. An operator of a transmission pipeline operating below 30% SMYS located in a Class 3 or Class 4 area but not in a high consequence area must follow the requirements in paragraphs (d)(1), (d)(2) and (d)(3) of this section. (1) Apply the requirements in paragraphs (b)(1)(i) and (b)(1)(iii) of this section to the pipeline; and (2) Either monitor excavations near the pipeline, or conduct patrols as required by § 192.705 of the pipeline at bimonthly intervals. If an operator finds any indication of unreported construction activity, the operator must conduct a follow up investigation to determine if mechanical damage has occurred. (3) Perform semi-annual leak surveys (quarterly for unprotected pipelines or cathodically protected pipe where electrical surveys are impractical). (e) Plastic transmission pipeline. An operator of a plastic transmission pipeline must apply the requirements in paragraphs (b)(1)(i), (b)(1)(iii) and (b)(1)(iv) of this section to the covered segments of the pipeline.

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87	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.745, pg 476	192.745 Valve maintenance: Transmission lines. (a) Each transmission line valve that might be required during any emergency must be inspected and partially operated at intervals not exceeding 15 months, but at least once each calendar year. (b) Each operator must take prompt remedial action to correct any valve found inoperable, unless the operator designates an alternative valve.
88	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 (i)(4), pg 593	195.452 Pipeline integrity management in high consequence areas. ... (i) What preventive and mitigative measures must an operator take to protect the high consequence area?—.... (4) Emergency Flow Restricting Devices (EFRD). If an operator determines that an EFRD is needed on a pipeline segment to protect a high consequence area in the event of a hazardous liquid pipeline release, an operator must install the EFRD. In making this determination, an operator must, at least, consider the following factors—the swiftness of leak detection and pipeline shutdown capabilities, the type of commodity carried, the rate of potential leakage, the volume that can be released, topography or pipeline profile, the potential for ignition, proximity to power sources, location of nearest response personnel, specific terrain between the pipeline segment and the high consequence area, and benefits expected by reducing the spill size.
89	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.420, pg 583	195.420 Valve maintenance (a) Each operator shall maintain each valve that is necessary for the safe operation of its pipeline systems in good working order at all times. (b) Each operator shall, at intervals not exceeding 71⁄2 months, but at least twice each calendar year, inspect each mainline valve to determine that it is functioning properly. (c) Each operator shall provide protection for each valve from unauthorized operation and from vandalism.
90	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart C, Section 195.104, pg 563	195.104 Variations in pressure. If, within a pipeline system, two or more components are to be connected at a place where one will operate at a higher pressure than another, the system must be designed so that any component operating at the lower pressure will not be overstressed.

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91	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.428, pg 584	195.428 Overpressure safety devices and overfill protection systems. (a) Except as provided in paragraph (b) of this section, each operator shall, at intervals not exceeding 15 months, but at least once each calendar year, or in the case of pipelines used to carry highly volatile liquids, at intervals not to exceed 71⁄2 months, but at least twice each calendar year, inspect and test each pressure limiting device, relief valve, pressure regulator, or other item of pressure control equipment to determine that it is functioning properly, is in good mechanical condition, and is adequate from the standpoint of capacity and reliability of operation for the service in which it is used. (b) In the case of relief valves on pressure breakout tanks containing highly volatile liquids, each operator shall test each valve at intervals not exceeding 5 years. (c) Aboveground breakout tanks that are constructed or significantly altered according to API Standard 2510 after October 2, 2000, must have an overfill protection system installed according to section 5.1.2 of API Standard 2510. Other aboveground breakout tanks with 600 gallons (2271 liters) or more of storage capacity that are constructed or significantly altered after October 2, 2000, must have an overfill protection system installed according to API Recommended Practice 2350. However, operators need not comply with any part of API Recommended Practice 2350 for a particular breakout tank if the operator notes in the manual required by § 195.402 why compliance with that part is not necessary for safety of the tank. (d) After October 2, 2000, the requirements of paragraphs (a) and (b) of this section for inspection and testing of pressure control equipment apply to the inspection and testing of overfill protection systems.
92	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart L, 192.605 (b)(5), pg 454	192.605 (b) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following, if applicable, to provide safety during maintenance and operations. .... (5) Starting up and shutting down any part of the pipeline in a manner designed to assure operation within the MAOP limits prescribed by this part, plus the build-up allowed for operation of pressure-limiting and control devices. ...

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100	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart M, 192.706, pg 470	192.706 Transmission lines: Leakage surveys. Leakage surveys of a transmission line must be conducted at intervals not exceeding 15 months, but at least once each calendar year. However, in the case of a transmission line which transports gas in conformity with § 192.625 without an odor or odorant, leakage surveys using leak detector equipment must be conducted— (a) In Class 3 locations, at intervals not exceeding 71⁄2 months, but at least twice each calendar year; and (b) In Class 4 locations, at intervals not exceeding 41⁄2 months, but at least four times each calendar year.
101	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 (i)(3), pg 593	195.452 Pipeline integrity management in high consequence areas. ... (i) What preventive and mitigative measures must an operator take to protect the high consequence area?—....(3) Leak detection. An operator must have a means to detect leaks on its pipeline system. An operator must evaluate the capability of its leak detection means and modify, as necessary, to protect the high consequence area. An operator's evaluation must, at least, consider, the following factors—length and size of the pipeline, type of product carried, the pipeline's proximity to the high consequence area, the swiftness of leak detection, location of nearest response personnel, leak history, and risk assessment results. ...

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5	Hazardous Substance Pollution	Article 4, Section 425 (e) (2), pg 119	(2) Part 2 - Prevention Plan: The prevention plan must include a detailed description of all oil discharge prevention measures and policies employed at the facility, vessel, or operation, with reference to the specific oil discharge risks involved. The prevention plan must describe how the applicant meets all the applicable requirements of 18 AAC 75.005- 18 AAC 75.085. The prevention plan may be submitted as a separate volume, and must include, at a minimum, the following information: (A) discharge prevention programs - a description and schedule of regular oil discharge prevention, inspection, and maintenance programs in place at the facility or operation.....
6	Hazardous Substance Pollution	Article 4, Section 425 (e) (4)(A)(iv), pg 125	(4) Part 4 -- Best Available Technology Review: Unless application of a state requirement would be preempted by federal law, the plan must provide for the use of best available technology consistent with the applicable criteria in 18 AAC 75.445(k). In addition, the plan must (A) identify technologies applicable to the applicant's operation that are not subject to response planning or performance standards specified in 18 AAC 75.445(k)(1) and (2); these technologies include, at a minimum, ... (iv) for a crude oil transmission pipeline contingency plan: ... monitoring... requirements for crude oil pipelines ...
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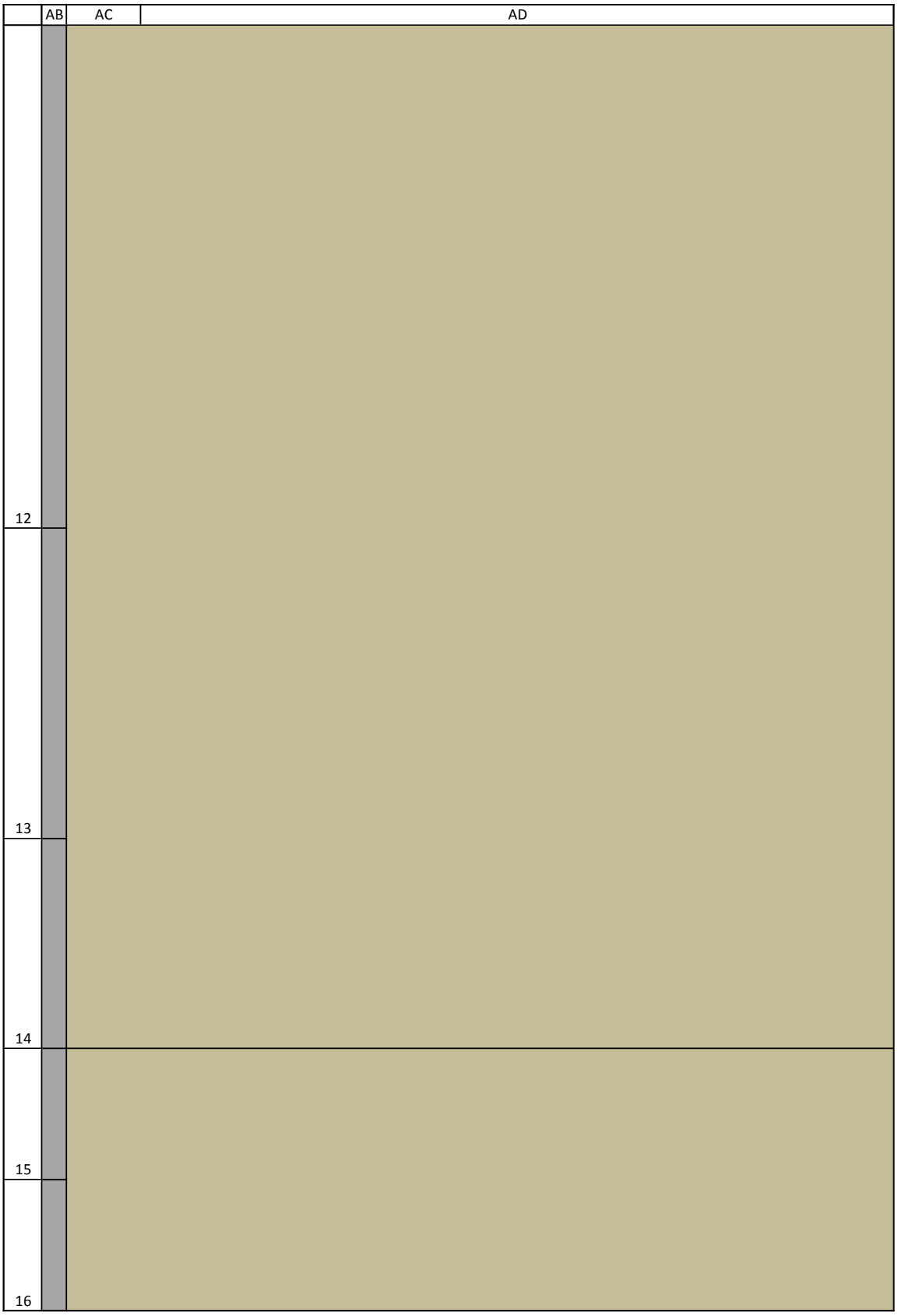
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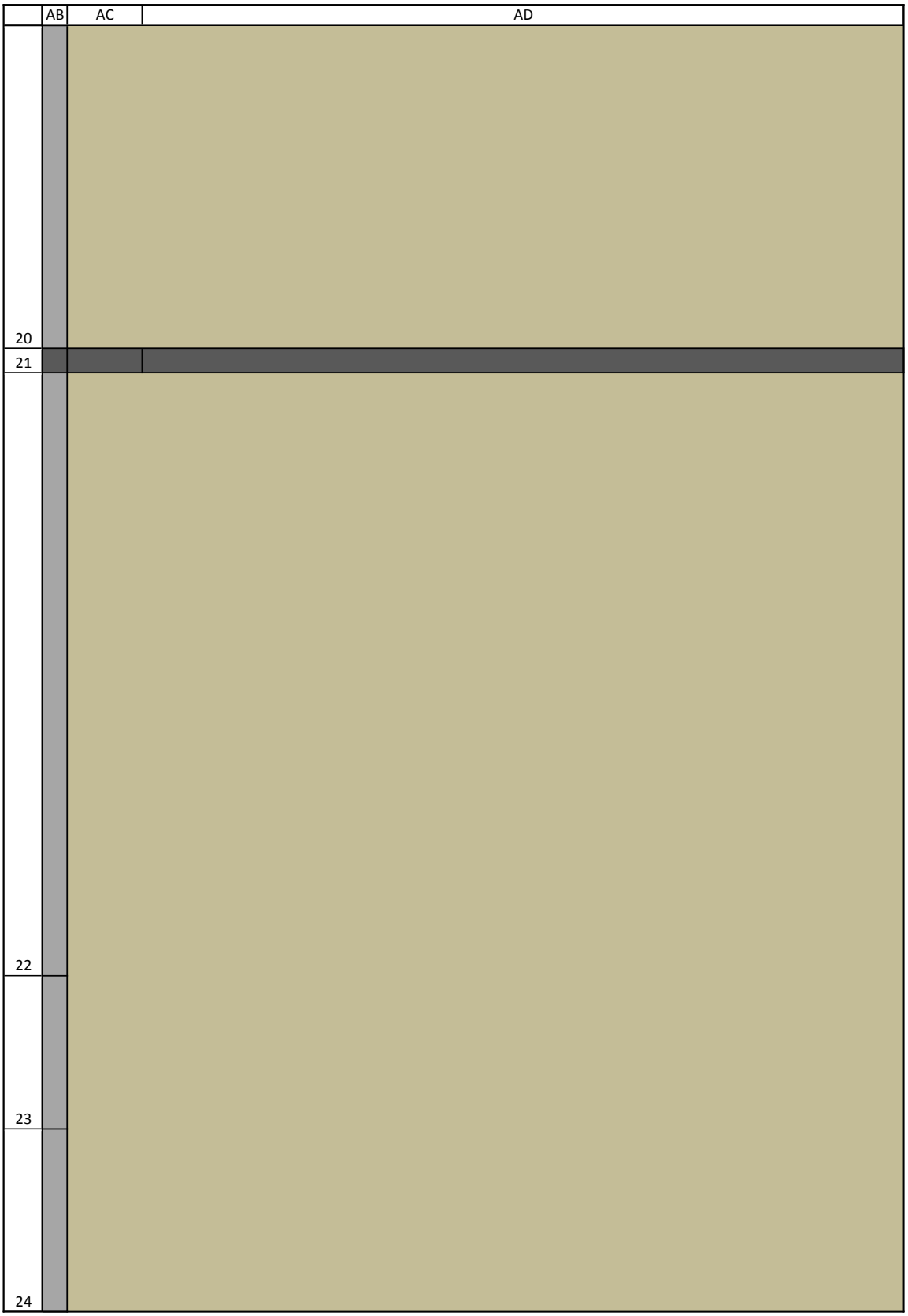
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33	Substance Pollution Control	Article 1, Section 055, pg 11	18 AAC 75.055. Leak detection, monitoring, and operating requirements for crude oil transmission pipelines. (a) A crude oil transmission pipeline must be equipped with a leak detection system capable of promptly detecting a leak, including ..... (3) for a remote pipeline not otherwise directly accessible, weekly aerial surveillance, unless precluded by safety or weather conditions. ....
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44	Control	Article 1, Section 047 (d), pg 9	(d) No later than December 30, 2007, the operator shall (1) completely contain the entire circumference of the flow line and provide the interstitial space with a leak detection system approved by the department; or (2) have in place a preventative maintenance program that ensures the continued operational reliability of any flow line system component affecting quality, safety, and pollution prevention; the owner or operator shall ensure that the program, (A) for submerged flow lines, is consistent with Chapters VII through IX of Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids, (ASME B31.4-2002), adopted by reference in (b)(1) of this section; (B) for buried flow lines, is consistent with Chapters VII and VIII of Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids (ASME B31.4-2002), adopted by reference in (b)(1) of this section; (C) for aboveground flow lines, as appropriate, a program consistent with (i) the requirements of American Petroleum Institute's (API) Piping Inspection Code, Inspection, Repair, Alteration, and Rerating of In-service Piping Systems, Second Edition, October 1998, Addendum 1, February 2000, Addendum 2, December 2001, and Addendum 3, August 2003, adopted by reference excluding Section 8; (ii) Chapters VII and VIII of Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids (ASME B31.4-2002), (API 570) adopted by reference in (b)(1) of this section; and (D) for all flow lines, procedures to review proposed changes in operations to evaluate potential impacts on pipe integrity. (*NOTE (d)(1) also included in external corrosion and leak detection*)

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48	Control	Article 1, Section 047 (h), pg 10	18 AAC 75.047 .... (h) The owner or operator shall verify compliance with the requirements of...(d)(2) of this section by documentation, including.....(2) for a preventative maintenance program under (d)(2) of this section, documentation to validate the effectiveness of that program, including (A) the procedures for program implementation under (d)(2) of this section; (B) dates and locations of inspections and tests; (C) inspections and test data evaluation including analysis, pipewall thickness measurements and remaining life calculations; and (D) internal audit procedures of the program, including descriptions of controls and corrections for identified defects.

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50	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 425 (e) (4)(A)(iv), pg 125	(4) Part 4 -- Best Available Technology Review: Unless application of a state requirement would be preempted by federal law, the plan must provide for the use of best available technology consistent with the applicable criteria in 18 AAC 75.445(k). In addition, the plan must (A) identify technologies applicable to the applicant's operation that are not subject to response planning or performance standards specified in 18 AAC 75.445(k)(1) and (2); these technologies include, at a minimum, ... (iv) for a crude oil transmission pipeline contingency plan: ... operating requirements for crude oil pipelines ...
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55	20 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 2, Section 220, pg 30	18 AAC 75.220. Application for amendment. The owner or operator must file an application with the department for a change in operation that would change the dollar amount of financial responsibility required under 18 AAC 75.235(a). The application must include appropriate proof of financial responsibility under 18 AAC 75.235 – 18 AAC 75.271, include a letter describing the change in operation, and be submitted to the department at least 30 days before placing the changed operations into service, except that the owner or operator of a nontank vessel must submit changes at least 15 days before placing the changed operations into service within state waters. The department will review the application in accordance with 18 AAC 75.205 - 18 AAC 75.270.
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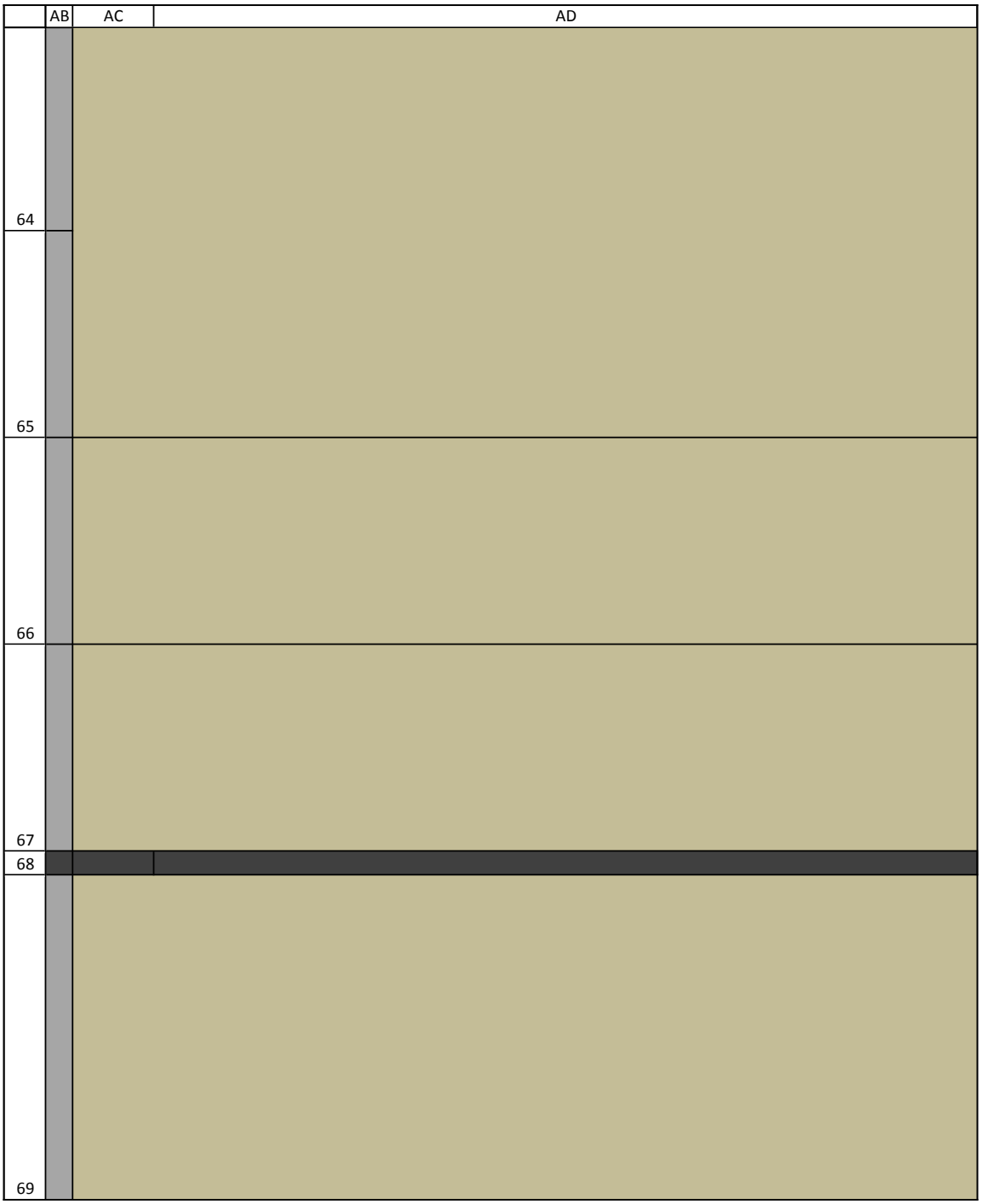

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72	The Pipelines Regulations	Section 17(3)(a), Pg 8	Pressure testing 17 ... (3) Where the minister has reason to doubt the integrity of a pipeline or portions of a pipeline, he or she may request at any time during the operation of the pipeline: (a) additional pressure tests on the pipeline or any portion of the pipeline; ..... (4) Where the minister makes a request pursuant to subsection (3), the operator shall comply with the request within the period specified by the minister. ...
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85	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 055, pg 11	18 AAC 75.055. Leak detection, monitoring, and operating requirements for crude oil transmission pipelines. .... (b) The owner or operator of a crude oil transmission pipeline shall ensure that the incoming flow of oil can be completely stopped within one hour after detection of a discharge. ...
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97	Hazardous Substance	Article 1, Section 055, pg 11	18 AAC 75.055. Leak detection, monitoring, and operating requirements for crude oil transmission pipelines. (a) A crude oil transmission pipeline must be equipped with a leak detection system capable of promptly detecting a leak, including (1) if technically feasible, the continuous capability to detect a daily discharge equal to not more than one percent of daily throughput; (2) flow verification through an accounting method, at least once every 24 hours; ...
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100	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 055, pg 11	18 AAC 75.055. Leak detection, monitoring, and operating requirements for crude oil transmission pipelines. (a) A crude oil transmission pipeline must be equipped with a leak detection system capable of promptly detecting a leak,….
101	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 047 (d), pg 9	(d) No later than December 30, 2007, the operator shall (1) completely contain the entire circumference of the flow line and provide the interstitial space with a leak detection system approved by the department; or (2) have in place a preventative maintenance program that ensures the continued operational reliability of any flow line system component affecting quality, safety, and pollution prevention; ….

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102	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 047 (d), pg 9	(d) No later than December 30, 2007, the operator shall (1) completely contain the entire circumference of the flow line and provide the interstitial space with a leak detection system approved by the department; or (2) have in place a preventative maintenance program .....(*NOTE: (d)(2) full part included in maintenance section)*
103	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 425 (e) (2), pg 119	(2) Part 2 - Prevention Plan: The prevention plan must include a detailed description of all oil discharge prevention measures and policies employed at the facility, vessel, or operation, with reference to the specific oil discharge risks involved. The prevention plan must describe how the applicant meets all the applicable requirements of 18 AAC 75.005- 18 AAC 75.085. The prevention plan may be submitted as a separate volume, and must include, at a minimum, the following information: ....(E) discharge detection - a description of the existing and proposed means of discharge detection, including surveillance schedules, leak detection, observation wells, monitoring systems, and spill-detection instrumentation; if electronic or mechanical instrumentation is employed, detailed specifications, including threshold detection, sensitivities, and limitations of equipment must be provided; ...

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104	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 425 (e) (4), pg 125	(4) Part 4 -- Best Available Technology Review: Unless application of a state requirement would be preempted by federal law, the plan must provide for the use of best available technology consistent with the applicable criteria in 18 AAC 75.445(k). In addition, the plan must (A) identify technologies applicable to the applicant's operation that are not subject to response planning or performance standards specified in 18 AAC 75.445(k)(1) and (2); these technologies include, at a minimum, ... (iv) for a crude oil transmission pipeline contingency plan: leak detection ... requirements for crude oil pipelines that include prompt leak detection as required by 18 AAC 75.055(a);

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5	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 5.2, pg 34	5.2 PIPELINE INTEGRITY MANAGEMENT PROCESS Monitoring, inspection and mitigation of the identified integrity threats shall be appropriate for the threats and controls identified in the safety management study prepared in accordance with AS 2885 .1. Pipeline integrity management procedures shall be developed for each monitoring, inspection or mitigation action, to ensure the controls identified during the safety management study remain effective.
6	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.2.2, pg 57	9.2.2 Persons responsible for undertaking direct and indirect monitoring, inspection and assessment activities shall be competent to undertake these activities. The parties responsible for the Levels 1, 2 and 3 engineering assessments (see Clause 9.5) of anomalies and determination of repair methods for defects shall be competent to conduct engineering assessments.
7	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.2, pg 56	9.2 DIRECT ASSESSMENT 9.2.1 General Direct assessment has a four-element approach, as follows: (a) Pre-assessment Pre-assessment is the first element within the overall direct assessment process. This requires the compilation of past and present pipeline data. This data may include pipeline physical characteristics as well as operational history. (b) Indirect inspection This element incorporates the equipment and practices utilized to take measurements above ground or near a pipeline to locate and characterize anomalies. An indirect inspection survey could typically include coating and cathodic protection surveys and acoustic emission monitoring. (c) Direct examination This process is based on the equipment and the practices used to take measurements on or at the pipeline to locate and characterize anomalies. A direct examination may be done with direct methods such as ILI, measured corrosion protection data, non-destructive examination on the pipeline (including excavations of representative sample locations), strain measurements, deposits and coating damage. (d) Post-assessment After the first three elements are confirmed, a fourth element, namely post-assessment, is required. The output of the post assessment is based on the data collected from the three previous elements and is utilized to- (i) support engineering assessments of the pipeline; and (ii) determine the need for any review of inspection intervals. The Licensee shall confirm/verify that the intent of each element is met taking into account historical data. These elements need not be conducted sequentially. NOTES: A depiction of the direct assessment process is shown in Figure 9 .1. 2 NACE RP0502 and NACE SP0206 provide additional guidance on direct assessment methodologies. These Standards do not incorporate methodology associated with stress corrosion cracking (SCC). For guidance on SCC, see NACE SP0204
8	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.4.2.7, pg 61	9.4.2.7 Anomalies on field welds and seam welds Anomalies found on field and seam welds, HAZ or areas near welds shall undergo NDT to determine the extent and origin of the anomaly. The extent of NDT shall be assessed to ensure the chosen inspection method (or combination of methods) is capable of detecting cracks . Such anomalies shall be accepted, provided they comply with the workmanship criteria set out in AS 2885.2, or based on engineering assessment involving consideration of service history and loading, anticipated service conditions (including the effects of corrosive and chemical attack), anomaly dimensions, and weld properties (including fracture toughness properties). Engineering assessments of these anomalies shall be carried out in accordance with suitable anomaly assessment methods. NOTE: Suggested anomaly assessment methods are given in Table 9.2. Pipe containing weld anomalies that are unacceptable shall be removed, replaced or otherwise repaired as specified in this Standard, AS 2885.1 and AS 2885.2. NOTE: Seam welds include longitudinal and spiral seam welds.

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9	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.4.2.8, pg 61	9.4.2.8 Anomalies on fibreglass pipelines Anomalies detected on the surface of fibreglass (glass reinforced) material pipelines shall be inspected using visual and mechanical measurement methods capable of determining the depth and shape of the anomaly. NOTE: For guidance on assessment of anomalies commonly found in this type of material, see Table 9.1.
10	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.5, pg 62	9.5 FITNESS FOR PURPOSE (FFP) LEVEL ASSESSMENT 9.5.1 General This Standard provides various methods for the assessment of pipeline anomalies in a framework of levels-Level 1, 2 and 3. NOTE: An assessment flow chart is shown in Figure 9.2 . Level 1 being most conservative, empirical and having the least data requirements; Level 2 having intermediate data requirements; and Level 3 being detailed, reliability based and having the most data requirements. The level assessment methodology shall be documented and shall be applied to both parent metal/mother pipe and weld anomaly assessments. NOTE: Examples of methods of assessment are given in Appendix C. .... 9.5.2 Anomaly degradation rates ... 9.5.3 Pre-level assessment ... 9.5.4 Level 1 assessment ... 9.5.5 Level 2 assessment .... 9.5.6 Level 3 assessment
11	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.6, pg 67	9.6 ASSESSMENT OF ILI RESULTS The Licensee shall identify anomaly indications with reported characteristics and dimensions that might indicate the presence of defects, taking into account allowances for errors in the reported anomaly dimensions. I 0 I AS 2885.3-2012 68 The Licensee shall assess the severity of reported anomalies and perform excavations and additional verification inspections until there is confidence that any remaining anomalies do not pose a threat to pipeline integrity. NOTE: An anomaly growth assessment should be undertaken and a pipeline reinspection interval determined and the integrity management plan revised. Additional repairs that are required, based on anomaly growth assessment, should be identified to ensure all indications posing a threat to pipeline integrity over the re-inspection interval are addressed.

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12	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.7, pg 68	9.7 INSPECTION TOLERANCES The Licensee shall take into account the allowances for errors m the chosen NDT verification inspection technique. Where assessment of ILI results is undertaken, the Licensee shall consider the inspection tool tolerances. Pipelines with indications of anomalies shall be subject to detailed inspection, if required, to verify the nature and dimensions of the anomalies. If verification of anomaly dimensions via NDT inspections is not possible, the Licensee shall undertake the anomaly assessment using the criteria given in Table 9.2 to the worst case anomaly dimensions detected during ILI.
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15	Pipelines-Gas and liquid petroleum, Part	Section 2.2.5.2, pg 19	2.2.5.2 Data acquisition and analysis The Licensee shall establish procedures for identifying, collecting and analysing the pipeline's operational, maintenance and reliability data to identify trends in the pipeline 's operation and performance. .....
16	Pipelines-Gas and liquid petroleum, Part	Section 5.2, pg 34	5.2 PIPELINE INTEGRITY MANAGEMENT PROCESS ....The pipeline management system shall include the identification and capture of relevant data necessary to enable an assessment, at approved intervals, of the pipeline condition and the physical and procedural control measures in place. ...

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17	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.3, pg 79	10.3 REMAINING LIFE REVIEW The integrity and remaining life of an existing pipeline shall be reviewed for continued operation at its design conditions and MAOP, at approved intervals and immediately following pipeline failure. The first review shall be completed in accordance with the anticipated corrosion rates detailed in the design but not later than 10 years after commissioning, with the interval of subsequent reviews to be determined by the preceding assessment with a maximum period of 10 years. If the end of the design life expires earlier than the 10 years interval the review shall be undertaken at the earlier time. NOTE: This Clause is intended to assist the Licensee in verifying that the design life determined in accordance with AS 2885.1 is achievable. This Clause is also intended to determine any mitigation actions required to achieve the design life and provides a better focus for determining the current condition and the integrity management requirements including inspection frequency . The data required for the review should include the following: (a) Pipeline integrity degradation data from in line inspection (ILl) surveys or metal loss defect assessments. (b) Integrity reviews (c) Remedial action(s) taken for identified defects (e.g. refurbishment profiles or MAOP reductions). (d) Operating records such as operating pressure and temperature cycles. (e) Corrosion protection records including coating system integrity and CP monitoring. (f) Threat assessment. (g) Change in environmental factors. (h) Equipment functionality and reiiability. (i) Changes in location class. U) Outcomes from any root cause analysis undertaken (see Clause 1 0.5). The engineering review shall include verification of the following issues: (i) Demonstration of structural integrity in accordance with this Standard, to confirm the pipeline can continue to contain the fluids at the design conditions. (ii) The type and configuration of any defects, the rate of corrosion and the minimum remaining wall thickness. AS 2885.3-2012 80 (iii) The frachtre control plan in accordance with AS 288 5.1 and the identification of any changes required to the fracture control methods. (iv) The completion or review of a safety management study conducted in accordance with AS 2885.1 and the identification of any changes required to the mitigation methods . (v) Review of the adequacy of the pipeline management system, PIMP, operating and maintenance, emergency response, and safety and environmental procedures. Where the review is being completed at the end of the design life, the engineering review process shall include verification of the following additional issues: (A) The identification of any additional requirements that enable the pipeline to comply with the latest versions of AS 2885 .1 and AS 2885 .2 current at the time of the review; and (B) The identification of any tenure issue (i.e. permit to occupy expiry) or statutory requirements (i.e. pipeline licence renewal). Upon completion of the review, and prior to the expiry of the review interval, subject to the requirements of retrospectivity, all issues identified in the engineering review shall be addressed, and the pipeline records amended in accordance with the requirements of this Section. The pipeline shall be operated only under the conditions and the limits so established and approved.
18	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.4, pg 80	10.4 REFURBISHMENT Where the remaining life of a pipeline has been evaluated as insufficient to meet its design life- (a) the design life of the pipeline shall be revised in accordance with Clause 10.2.1 for any proposed MAOP reduction; or (b) a refurbishment program shall be planned and implemented to reinstate the structural integrity of the pipeline. Pipeline refurbishment includes pipe and pipe coating replacement, and pipeline valves and facilities renewal. The materials for the refurbishment shall be confirmed in accordance with AS 2885.1 . In addition, the refurbishment shall be carried out in accordance with procedures performed by trained and experienced persons, and assessed to meet all occupational health and safety and environment management and safety management study requirements. Material for the replacement may be one of two categories as follows: (i) Like for like replacement Materials used for replacing existing pipe and associated equipment shall comply with the original design specifications subject to further requirements of revisions and amendments of AS 2885.1. (ii) Material other than the original design Material and components qualification shall meet the requirements of AS 2885.1. All materials for the refurbishment shall be provided with material certificates and test records for material traceability that meet maintenance requirements. All work records shall be maintained for system periodic review and analysis.
19	liquid petroleum, Part 3: Operation and maintenance	Section 12.3(h,j), pg 88	12.3 OPERATION AND MAINTENANCE RECORDS The Licensee shall prepare a records management plan. The records management plan shall detail the records to be obtained, the records to be retained, storage methods and procedures to maintain currency of the records, until the abandonment of or removal of the pipeline. Records that shall be included in the plan are the following: ..... (h) Routine inspections, and inspections and testing carried out when cutting a pipeline or making hot taps. ....j) Details of inspections of internal or external pipeline condition. ....

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22	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 5.3, pg 35	5.3 REVIEW OF PIPELINE INTEGRITY MANAGEMENT PLAN (PIMP) AS 2885.3-2012 The PIMP of each pipeline shall be .... if necessary, amended whenever- .... (b) where there are new failure mechanisms identified as relevant to the pipeline that could adversely affect the safety of the public, the operating personnel or the integrity of the pipeline. Investigations and calculations shall be reviewed to confirm that- (i) the PIMP is consistent with the current structural condition of and the failure mechanisms identified in the pipeline; and (ii) any existing basis used to determine the remaining life calculated in accordance with Section 10 is valid.
23	Pipelines-Gas and liquid petroleum, Part 3:	Section 2.2.3.2, pg 17	2.2.3.2 Planning for normal operation When developing the policies and procedures of the pipeline management system, the Licensee shall utilize the various safety management studies undertaken under the requirements of AS 2885.1 and this Standard. Control measures required to eliminate threats or reduce them to an acceptable level, including threats to the environment as a result of pipeline operation activities, shall be incorporated into the appropriate procedures. The Licensee shall also establish a process for the identification of occupational health and safety and environment hazards and mitigation of occupational health and safety and environment risks as described in Section 4, prior to the commencement of any activity.
24	Gas and liquid petroleum, Part 3: Operation and maintenance	Section 4.2, pg 24	4.7.2 Pipeline corridor management Pipeline corridor management (right of way) involves... (b) maintaining easement and access track condition, particularly after heavy rain; …

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25	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.5.5, pg 19	2.2.5.5 Corrective and preventive action The Licensee shall develop and implement procedures for determining, approving and implementing corrective and preventive actions. The proposed actions shall, as far as reasonably practicable, eliminate or mitigate the issue and shall be appropriate and commensurate to the risk encountered. The proposed actions shall be recorded and their effectiveness determined by audit. The basis for any action shall be documented and the outcomes of actions taken, along with their effectiveness, shall be subject to management review.
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33	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 4.2, pg 24	4.7.2 Pipeline corridor management Pipeline corridor management (right of way) involves(a) vegetation management; (b) maintaining easement and access track condition, particularly after heavy rain; (c) maintaining signage; and (d) monitoring third-party activities.
34	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.4.1, pg 44	7.4 EXTERNAL INTERFERENCE DETECTION 7.4.1 Pipeline patrolling Pipeline patrols shall be undertaken at a frequency that will enable the Licensee to be assured that external interference threats are identified and managed. The patrol method and frequency shall be appropriate to the pipeline environment and location class and to the assessed likelihood of external interference and documented in the PIMP. The patrol method and frequency shall be varied as required by changes in threat, threat likelihood and consequence throughout the pipeline life. The boundaries and responsibilities for patrolling shall be clearly understood and defined in the pipeline management system to eliminate any gaps in coverage. Where a pipeline is decommissioned or its operational arrangements change, the frequency and type of patrolling shall be reviewed in the pipeline management system. Factors to be considered when developing a patrolling program at a minimum include the following: (a) Operation of a 'one-call system'. (b) Whether the pipeline is above- or below-ground. (c) Other forms of protection against interference. (d) Third-party activities that could affect the pipeline. (e) Location in a built-up area. (f) Locations close to environmentally sensitive areas. (g) Provision of a leak-detection system. (h) Regularity of use. (i) Nature of the fluid carried. U) Design and operating pressure and temperature. (k) Specific requirements such as at bridge crossings The Licensee shall ensure pipeline patrolling is conducted in accordance with the PIMP.
35	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.4.2, pg 45	7.4.2 Patrol of pipeline During a patrol, attention shall be given to excavation, directional drilling, blasting operations, boring activities, including the use of an auger, and drains or ditches that are maintained and cleaned by an independent party. Natural events such as flood, earthquake and ground slips have the potential to affect the pipe's integrity. Uncontrolled ground movements can impact and/or displace the pipe resulting in higher pipe stress and/or coating damage. The following shall be identified during the patrol of a pipeline: (a) Variations to surface conditions such as erosion or earth movement or seismic activity. (b) Changes to watercourse, steep terrain and crossings. (c) Indications of leaks such as dead vegetation or evidence of liquid. (d) Construction activity or evidence of construction activity on or near the pipeline. (e) Impediments to access to valve stations, pressure regulator stations, compressor stations, pump stations, cathodic protection sites and communication installations for authorized personnel. (f) Deteriorating condition, visibility, adequacy and correctness of route markers and signs installed in accordance with the relevant requirements of Clause 7.3 .3. (g) Security of sites and evidence of unauthorized entry. (h) Any relevant action identified in the safety management study. (i) Any other factors affecting the safety and operation of the pipeline. U) Any factors likely to initiate a review of the safety management study such as urban encroachment and new developments. (k) Encroachment of vegetation limiting visibility of signs, access or potential of threat to pipeline coating from tree roots. The person conducting the patrol shall- (i) be issued with written patrolling procedures; (ii) be appropriately trained and competent in the procedures; (iii) know the extent of the pipeline easement and the location of the pipeline; (iv) be in radio/telephone communication with the control centre; and (v) maintain a patrol log. All patrol records shall be retained for a minimum period of 10 years and maintained as specified in the record management plan. Patrol records shall be available to determine procedural measure effectiveness during future safety management studies.
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38	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.1, pg 15	2.1 BASIS OF SECTION ....A pipeline shall have a documented and approved pipeline management system. AS 2885.3-2012 The pipeline management system shall be in place before commissioning and operation to ensure that the pipeline remains fit for operation.
39	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.7, pg 42	6.7 MAINTENANCE PLAN-PIPELINE A pipeline maintenance plan shall be prepared, and shall include, as a minimum, the following: (a) Maintenance measures identified during the relevant safety management study as necessary to eliminate threats, or to reduce threats to an acceptable level. (b) Where maintenance is to be carried out according to the plan. (c) A description of the maintenance tasks to be performed at each site. (d) A schedule for when each task is to be performed. (e) Records of results of the maintenance tasks that are to be kept. The maintenance plan shall be a standalone document or be incorporated into the pipeline management system
40	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.4(a), pg 18	2.2.4 Implementation The Licensee shall implement the plans and procedures of the pipeline management system covering at least the following : (a) Preparation for operation (Section 3). …

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41	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.2.7, pg 17	2.2.2. 7 Management review The Licensee shall establish procedures for regular management review of the effectiveness and appropriateness of the pipeline management system.....The pipeline management system shall be reviewed and, if necessary, updated, at least every 2 years or in the event of any change to the pipeline management system elements (as detailed in Clause 2.2.2 to 2.2.6).
42	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.3.3, pg 17	2.2.3.3 Planning and preparation for abnormal operations The Licensee shall plan and prepare for operation of the pipeline in circumstances that are different from those initially considered during the design of the pipeline or during significant disruption to normal operations. These circumstances may include the following: (a) Operating under emergency power supplies. (b) Operating without key assets such as compressors . (c) Operating at low flow, pressure or linepack levels . (d) Operating under communication outages . (e) Operating under changed conditions to maintain safety of a damaged pipeline.
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44	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.3.2, pg 37	6.3 PIPELINE OPERATION AND CONTROL 6.3.2 Operating parameters Operating parameters shall be established and communicated to enable pipeline control personnel to operate within desired limits, and the pipeline shall be operated within these limits. Operating parameters and alarm limits established for SCADA systems shall have appropriate change control measures in place. The Licensee shall regularly review the adequacy of operating and maintenance procedures as referenced in the pipeline management system.

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48	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 12.3(a-c), pg 88	12.3 OPERATION AND MAINTENANCE RECORDS The Licensee shall prepare a records management plan. The records management plan shall detail the records to be obtained, the records to be retained, storage methods and procedures to maintain currency of the records, until the abandonment of or removal of the pipeline. Records that shall be included in the plan are the following: (a) Records required under Clause 12.2. (b) Historical pipeline management system plans and procedures including previous versions of the safety and operating plan.(c) Any change to operating conditions, engineering investigations and any work carried out in connection with any changes to operating conditions. .... (l) Correspondence with statutory and regulatory authorities. (m) Safety management study reviews. ...The Licensee shall also prepare and retain for a minimum of 10 years records of the following: (i) Necessary operational data. (ii) Pipeline surveillance patrol reports.

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49	Gas and liquid petroleum, Part 3: Operation and maintenance	Section 12.3(o), pg 88	12.3 OPERATION AND MAINTENANCE RECORDS The Licensee shall prepare a records management plan. The records management plan shall detail the records to be obtained, the records to be retained, storage methods and procedures to maintain currency of the records, until the abandonment of or removal of the pipeline. Records that shall be included in the plan are the following: ..... (o) Operation and maintenance personnel competency details and training records. ....
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55	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.2.6, pg 17	2.2.2.6 Change management The Licensee shall establish procedures for managing changes to the pipeline management system, procedures, pipeline design or operation so that they are conducted in a controlled manner, and reviewed and approved. Any change to the pipeline or its operating context shall be reviewed and approved. Change shall be considered to have taken place if the engineering design has been upgraded or modified (see Section 1 0), or if any event or newly identified threat initiates an operational, technical or procedural change in the measures in place to- (a) protect the pipeline and associated components; (b) promote public awareness of the pipeline; (c) operate and maintain the pipeline safely; (d) respond to emergencies; (e) prevent and minimize loss of containment; (f) carry out inspections in accordance with Clauses 6.4, 6.5, 6.6 and Clause 6.7; and (g) ensure that the plans and procedures continue to comply with the engineering design. The change management procedures shall address implementation of any resulting pipeline management system changes, including notification and training of staff impacted by the change, and the allocation of responsibilities for any identified actions .
56	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.2.1, pg 76	10.2.1 Design conditions changes Design condition changes shall be subject to an assessment in accordance with appropriate change management procedures. Design condition changes may require the modification of operating, maintenance and emergency procedures and to the MAOP and design life. The following list is given as a guide to items of change that should initiate an assessment: (a) Process fluid . (b) Pressure and temperature. (c) Surrounding or adjacent land use. (d) Pipeline damage or deterioration. (e) Pipeline modification. (f) Pipeline raising/lowering. (g) Pipeline route relocation. (h) Pressure control and protection systems including logic changes. (i) Design life. (j) A change in MAOP, including MAOP upgrade (see AS 2885.1).The assessment shall include, as appropriate, a review of the following: (i) The primary and secondary location classes along the pipeline. (ii) Management of risk to the public, property, environment or to the pipeline in accordance with AS 2885.1. (iii) The protection measures, both physical and procedural, required against third-party damage in accordance with AS 2885.1. (iv) The physical characteristics of the pipeline, including the diameter, wall thickness, SMYS, fracture toughness properties, strength test pressure and leak test pressure. NOTE:These may be determined from records or, in the absence of records, by testing. (v) The physical condition of the pipeline, as determined from records of the operation and maintenance and from reports of examinations, inspections and monitoring, including those pertinent to corrosion mitigation. (vi) The design pressure.

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57	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 5.3, pg 35	5.3 REVIEW OF PIPELINE INTEGRITY MANAGEMENT PLAN (PIMP) AS 2885.3-2012 The PIMP of each pipeline shall be .... if necessary, amended whenever- (a) there are changes (including corrosion or damage, see Section 9); …. Investigations and calculations shall be reviewed to confirm that- (i) the PIMP is consistent with the current structural condition of and the failure mechanisms identified in the pipeline; and (ii) any existing basis used to determine the remaining life calculated in accordance with Section 10 is valid.
58	Standard - Pipelines-Gas	Section 6.3.1(a), pg 37	6.3 PIPELINE OPERATION AND CONTROL 6.3.1 General Pipeline operation and control shall be continually monitored while the pipeline is in operation to ensure that pipeline structural integrity is maintained. The pipeline shall be operated in accordance with the following: (a) Operate a pipeline only when it conveys the fluid or fluids under the conditions (including subsequent changes) for which it was designed, constructed, tested, and approved. ….
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69	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.3.1(b), pg 37	6.3 PIPELINE OPERATION AND CONTROL 6.3.1 General Pipeline operation and control shall be continually monitored while the pipeline is in operation to ensure that pipeline structural integrity is maintained. The pipeline shall be operated in accordance with the following: ... (b) Ensure that during normal operation, the overpressure control system is in place to ensure the operating pressure, at any point in the pipeline, does not exceed the MAOP, in accordance with AS 2885.1, and that transient pressure does not exceed 110% of the MAOP.....

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76	Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.2.8, pg 79	10.2.8 MOP adjustment The Licensee shall determine the implications of an MOP adjustment in accordance with pipeline change management procedure, taking into consideration the following: (a) Length of time at current MOP. (b) Magnitude of difference between MAOP and MOP. (c) Length of time since last MAOP review or remaining life review.
77	determine the implications of an		
78	management procedure, taking into consideration the		
79	(a) Length of time at current MOP.		
80	(b) Magnitude of difference between MAOP and MOP.		

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81		Section 9.8, pg 68	9.8 MAXIMUM OPERATING PRESSURE (MOP) RESTRICTION When an inspection identifies that the pipeline integrity may be affected, the Licensee shall determine if MOP restriction needs to be applied until corrective actions are undertaken. The MOP restriction shall remain until such time that repairs, follow-up inspections, or further anomaly assessment can be completed. The MOP restriction shall be documented; and communicated to all relevant operating personnel. Following remediation of the pipeline anomaly, reinstatement of the pipeline MOP shall be subject to a safety management study, to ensure continuous safe operation. Where an MOP restriction may be required for an extended period (e.g. 12 months or longer), a safety management study shall be undertaken to assess the integrity of the pipeline and its reliable operation, prior to lifting the MOP restriction. Where an anomaly is determined to affect the pipeline's long-term integrity, the pipeline MAOP shall be reduced. MAOP reduction shall be approved and documented. NOTE: The purpose of a MOP restriction is to provide a margin of safety to the pipeline at the time of the damage identification. Pressure reduction is usually temporary during repairs or until remediation is completed. Typically the pressure is reduced to 80% of the peak pressure at that location within the previous 6 months for gas pipelines and 2 months for liquid pipelines (subject to risk assessment and/or anomaly assessment). Consideration should be given to typical operating conditions, including surge and transient conditions.
82	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 12.3, pg 88	12.3 OPERATION AND MAINTENANCE RECORDS The Licensee shall prepare a records management plan. The records management plan shall detail the records to be obtained, the records to be retained, storage methods and procedures to maintain currency of the records, until the abandonment of or removal of the pipeline. Records that shall be included in the plan are the following: ..... (p) MAOP review documents. ...
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84	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.3.1(c), pg 37	6.3 PIPELINE OPERATION AND CONTROL 6.3.1 General Pipeline operation and control shall be continually monitored while the pipeline is in operation to ensure that pipeline structural integrity is maintained. The pipeline shall be operated in accordance with the following: .... (c) Ensure that the operating temperature is such that the coating temperature rating and the thermal stress limits used in the pipeline design are not exceeded. ...

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90	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.2.4, pg 77	10.2.4 Review of pressure-control and over-pressure protection systems 10.2.4.1 Pressure control systems Pressure-control systems, including compressor supplier packages control software, shall be suitable for and effective at the intended range of operating pressures. Any changes to pressure-control systems shall be documented. Suitability of pressure-control systems shall be reviewed at approved intervals and 111 conjunction with changes to supply capacity.

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91	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.2.4.2, pg 77	10.2.4.2 Over-pressure protection systems Over-pressure protection systems shall be subject to an engineering assessment to determine the system's integrity, reliability and suitability for effective protection at the MAOP. Suitability of instrumented over-pressure protection systems shall be reviewed as follows: (a) Where the design is based upon instrumented systems, the safety and integrity level shall be reviewed when the risk of operation of the pipeline changes. (b) The reliability of the system shall be reassessed whenever components are changed to ensure the safety and integrity level is maintained. Any changes to over-pressure protection systems shall be documented. NOTE: Changes in design conditions of process fluid , surrounding or adj acent land use and a change in MAOP (including MAOP upgrade) would normally be consid ered as changing the consequence (and hence risk) of a failure due to an over-press ure event.
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100	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.6.3, pg 40	6.6.3 Leak detection The PIMP shall nominate the methods used for leakage detection, and the minimum frequency of inspection by each method. The selected types of surveys or system shall be effective for determining whether a potentially hazardous leakage exists . The extent and frequency of the leakage surveys shall be based on operating pressure, piping age, class location, and whether the pipeline transports un-odourized gas. NOTE: Leakage surveys are only effective when the fluid is detectable by the instrument used for the survey. Tracer gas will be required for inert gas (C02) or low vapour point liquid (stabilized crude oil) pipelines. There is normally no need to use tracer gas for hydrocarbon gas or HVPL pipelines. Location of any leaks should be determined by reviewing pipeline operating data, undertaking field leak detection in any suspected pipeline section, and/or mainline valve facilities . .....
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3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**
4	**PROGRAM**			
5	Pipeline Regulation	Part 1, Section 7.1, 7.3, pg 12	7(1) A licensee shall prepare and maintain a manual or manuals containing procedures for .... integrity management, ...and shall on request file a copy of each manual with the Board for review. .... 7(3) A licensee shall (a) update the manuals referred to in subsection (1) as necessary to ensure that their contents are correct, and (b) be able to demonstrate that the procedures contained in the manuals are being implemented.	
6	Pipelines - Requirements and Reference Tools	Dir. 077, Part A, Section 5.2, 5.3, pg 21	5.2 Requirement 1)A pipeline licensee must develop, implement, and document for all its pipelines a pipeline integrity management program that complies with the latest edition of CSA Z662, Annex N. 5.3 Interpretation A documented integrity management program is required for all pipelines, not just sour service pipelines. ...	For all pipelines (not just sour lines), the licensee must develop, implement, and document a Pipeline Integrity Management (PIM) program compliant with most recent CSA Z662, Annex N. A documented integrity management program is required for all pipelines, not just sour service pipelines.
7	Pipelines - Requirements and Reference Tools	Dir. 077, Part A, Section 5.3, pg 21	5.3 Interpretation ….The ERCB Pipeline Integrity Management Program Assessment Form and Guidelines are available on the ERCB Web site under Directives : Directive 077 to assist industry in complying with this requirement.	A form and guideline document is available to assist with preparing a PIM program.
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21	**PROGRAM CONFORMITY**			
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29	**PIM PLANNING & SCHEDULING**			
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49	**CORROSION**			
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51	Pipeline Regulation	Part 4, Section 53, pg 27	53(1) Unless otherwise authorized by the Board, a licensee shall conduct an inspection or test on all steel and aluminum lines in a pipeline system to determine the effectiveness of external corrosion mitigation procedures (a) annually, and (b) prior to the resumption of operation of a discontinued or abandoned pipeline. (2) Notwithstanding subsection (1), an inspection or test for external corrosion mitigation is not required for a pipeline being used as a conduit for a pulled-through freestanding liner unless the outer pipeline is being used as a secondary containment vessel.	All steel and aluminum pipelines are inspected annually/prior to resumption to determine effectiveness of external mitigation.
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71	Pipeline Regulation	Part 4, Section 54, pg 27	54(1) Unless otherwise authorized by the Board, a licensee shall conduct and document an evaluation of any operating or discontinued metallic pipelines in a pipeline system to determine the necessity for, and the suitability of, internal corrosion mitigation procedures (a) annually, ... (c) prior to the resumption of operation of a discontinued or abandoned pipeline. (2) The evaluation for internal corrosion mitigation shall include, as necessary, an evaluation of production records, operating experience, monitoring data and inspection data.	
72	Pipeline Regulation	Part 4, Section 55, pg 28	55(1) The evaluation for internal corrosion mitigation referred to in section 54 is not required for metallic pipelines containing a full contact polymeric liner unless there is reason to believe that corrosive fluids have entered the annular space between the liner and the pipe. (2) If there is reason to believe that corrosive fluids have entered the annular space between the liner and the pipe of a metallic pipeline referred to in subsection (1), the evaluation set out in section 54 must be performed to confirm whether the existing condition of the pipeline is acceptable and determine the necessity for internal corrosion mitigation procedures.	
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76	Pipeline Regulation	Part 1, Section 7(1)-7(3), pg 12	7(1) A licensee shall prepare and maintain a manual or manuals containing procedures for ... corrosion control ... and shall on request file a copy of each manual with the Board for review. (2) A licensee shall include in the appropriate manual referred to in subsection (1) provision for evaluation and mitigation of stress corrosion cracking when the licensed pipeline has disbonded or non-functional external coatings. 7(3) A licensee shall (a) update the manuals referred to in subsection (1) as necessary to ensure that their contents are correct, and (b) be able to demonstrate that the procedures contained in the manuals are being implemented.	
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78	Pipeline Regulation	Part 4, Section 56, pg 28	56 A licensee shall maintain a record of the inspections and evaluations required under sections 53, 54 and 55 and their results for a period of at least 6 years from the date the record is made and shall submit a copy of the record to the Board on request.	
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81	Energy Development Applications and Schedules	Dir. 056, Section 6.9.17 (48), pg 134	6.9.17 ... 48) When changing the substance, the applicant/licensee must consider the following and take appropriate mitigative actions to ensure continued compliance: ... h) corrosion monitoring and mitigation—if the substance is corrosive, effective internal corrosion mitigation and monitoring programs must be implemented according to Pipeline Regulation, Section 54, and CSA Z662	
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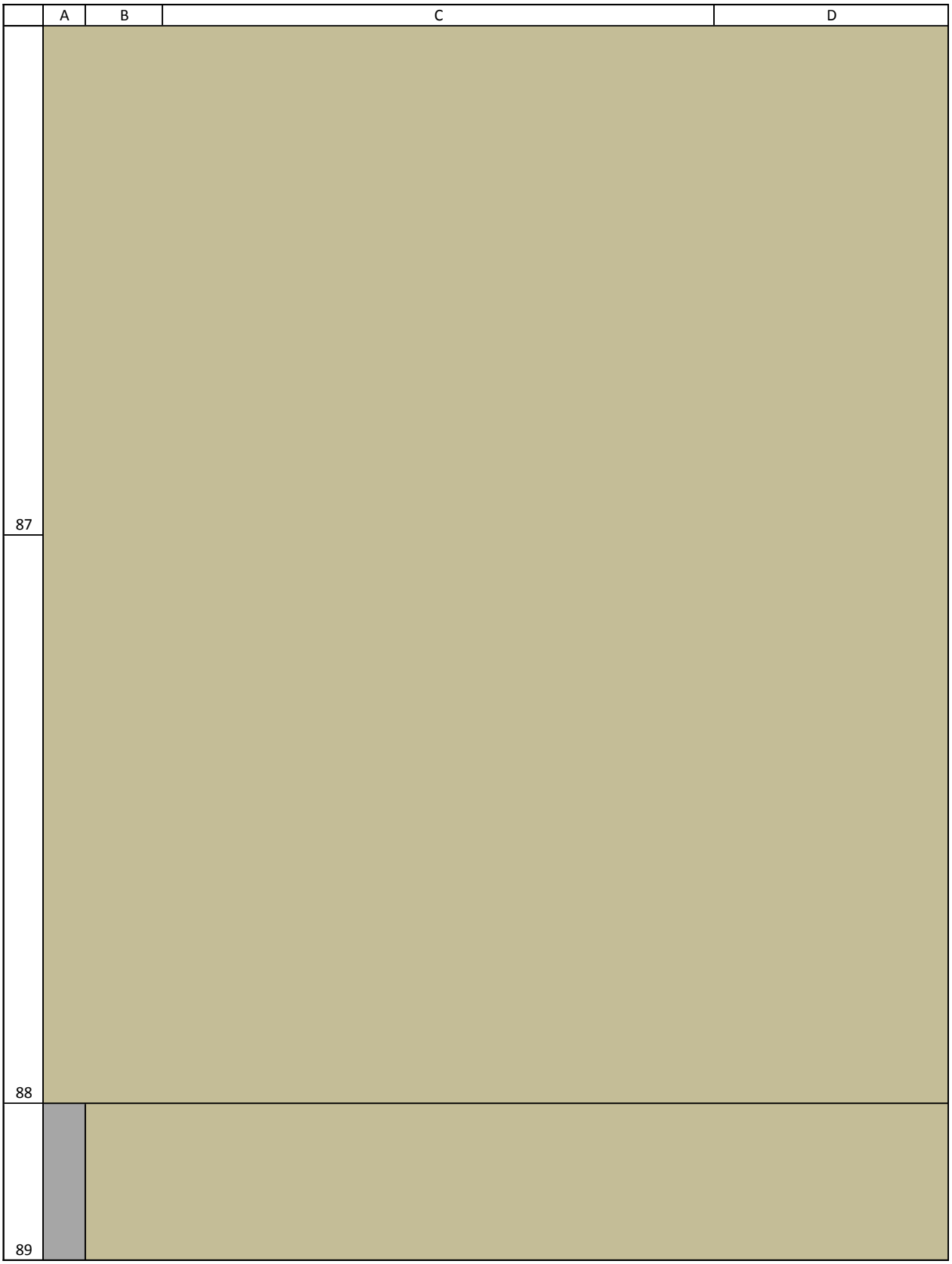

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5	(O&G) Pipeline and Liquefied Natural Gas Facility Regulation	Section 7, pg 4	7 (1) A pipeline permit holder must not operate a pipeline approved by the permit unless (a) the holder has prepared a pipeline integrity management program for the pipeline that complies with CSA Z662 and Annex N of CSA Z662, ... (c) the pipeline is operated in accordance with the pipeline integrity management program 7 (2) A pipeline permit holder, on the request of an official, must make available to the commission a copy of the pipeline integrity management program required under subsection (1) (a)	A pipeline permit holder must not operate the pipeline unless there is a PIM program for that pipeline which complies with CSA Z662 and Annex N of CSA Z662. On the request of an official, a permit holder must make a copy of the program available to the commission.	AB is COMPARABLE in that while both require a PIM program compliant with Annex N, BC adds the condition that the pipeline cannot be operated without the program. AB (in the Act and regulations) does not make this condition.
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51					AB EXCEEDS BC in that BC does not have specific requirements related to corrosion.
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81					AB REQUIRES a consideration of corrosion monitoring and mitigation when the substance changes. BC does not (in the Act and regulations) have this requirement.
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2	**Saskatchewan**				
3	**So**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5	The Pipelines Act	Part IV Sect 17 pg 9	Operating standards 17 Every person who operates a pipeline shall operate the pipeline so as not to endanger the public health or safety or the environment.	Operation	AB REQUIRES a program compliant with Annex N. SK does not specifically mention Annex N or a PIM program (in the Act or regulations), but SK does have the requirement to operate in such a way as to protect health/safety/environment, and to follow CSA Z662.
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51					AB EXCEEDS SK in that SK does not have specific requirements related to corrosion.
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81					AB REQUIRES a consideration of corrosion monitoring and mitigation when the substance changes. BC does not (in the Act and regulations) have this requirement.
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2	**CSA**				
3	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (level 3)**
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5	Guidelines for Pipeline System IMP	N.1.2, pg. 450	N.1.2 The major steps in an integrity management program are shown in Figure N.1, which contains references to relevant clauses in this Annex.		In the regulations AB mentions a PIM Manual, and in the Directive it requires the program to comply with the directive.
6	Guidelines for Pipeline System IMP	N.2, Pg 450	N.2 Integrity management program scope An integrity management program shall be documented and should include methods for collecting, integrating, and analyzing information related to the following, as appropriate for the type of pipeline system: (a) design and construction; (b) condition monitoring, (c) maintenance and repair; (d) operating conditions; (e) failure incidents; (f) damage incidents; (g) damage and deterioration (e.g., corrosion); (h) manufacturing imperfections; (i) environmental protection; and (j) safety.		
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22	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.15.1, pg. 459	N.15 Continual improvement N.15.1 General The operating company shall plan and implement the monitoring, measurement, analysis, and improvement process needed to (a) demonstrate conformity to the requirements of the integrity management program; and (b) continually improve the effectiveness of the integrity management program.		

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23	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.15.2, pg. 459	N.15.2 Integrity management program review and evaluation Integrity management programs shall be reviewed and evaluated periodically to determine whether they are in accordance with the provisions of this Standard and shall be revised as necessary. The methods for and responsibilities related to review and evaluation and the results of reviews and evaluations shall be documented. The items to be considered in such reviews and evaluations shall include the (a) timing of such reviews and evaluations; (b) effects of changes in the operating company, the pipeline, or external factors; (c) findings, status, and trends of corrective actions identified during internal and external audits; (d) status and trends of integrity performance indicators related to the frequency and consequences of failure and damage incidents and the completion of integrity-related work; (e) status and trends of integrity-related issues and recommendations identified during previous reviews and evaluations, operation, maintenance, or integrity-related work; (f) root cause or causes of recent failure incidents; and (g) successes and problems experienced in detecting and preventing potential failure incidents. N.15.3 Monitoring and measurement The operating company shall establish and maintain documented procedures to monitor and measure, on a regular basis, the performance of the integrity management program. Performance measures shall include (a) conformance to the established requirements and acceptance criteria; and (b) effectiveness in achieving stated objectives and targets. N.15.4 Audits Operating companies shall periodically audit the integrity management program. The items addressed in performing such audits should include (a) audit scope and objectives; (b) audit frequency and timing; (c) responsibilities for managing and performing the audit; (d) auditor independence; (e) auditor competency; and (f) audit procedures. N.15.5 Control of nonconformance The operating company shall establish and maintain procedures for defining responsibility and authority for handling and investigating nonconformances, taking action to mitigate any impacts, and for initiating and completing corrective and preventive action.		
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30	Annex N Guidelines for	N.11.1, pg. 456	N.11 Integrity management program planning N.11.1 Operating companies shall establish and document plans and schedules for activities related to pipeline system integrity management.		

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31	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.11.3, pg. 456	N.11.3 The methods used to prioritize and schedule activities related to pipeline system integrity management shall be documented.		
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39	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.4, Pg 452	N.4 Description of pipeline systems Operating companies shall develop descriptions of pipeline systems included in the integrity management program. When parts of the pipeline system are not included in the integrity management program, reasons for such exclusions shall be stated. Consideration shall be given to including the following in the description, as appropriate for the type of and included portions of the pipeline system: (a) purpose, capacity, and location; (b) the dimensions and material characteristics of the pipeline system, the types of coating, and the location and function of any ancillary equipment; (c) an estimate of the condition of the pipeline system, its coatings, and any ancillary equipment; (d) the operating conditions of the pipeline system, including service fluids, operating pressure, and temperature range; (e) the physical surroundings along the pipeline route; and (f) the physical boundaries of the pipeline system.		
40	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.3.1, Pg 450	N.3.1 The operating company shall document integrity-related corporate policies, values, objectives…..		
41	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.7, pg 453	N.7 Competency and training N.7.1 The operating company shall develop and implement competency and training requirements for company personnel, contractors, and consultants to give them the appropriate knowledge and skills for performing the elements of the integrity management program for which they are responsible. Personnel shall have appropriate knowledge and skills to perform the task associated with the development and implementation of the integrity management program. N.7.2 The operating company shall consider documenting the methods used to evaluate the knowledge and skills of personnel, contractors, and consultants. N.7.3 When evaluation of knowledge and skills indicates that development is required, training shall be arranged. Such training can include participation in (a) formal training courses provided by educational institutions or industry organizations; (b) workshops and conferences related to pipeline system integrity; (c) the work of technical committees of industry and standards development organizations; (d) research and development projects related to pipeline system integrity; and (e) supervised work experience.		

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42	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.3.3, Pg 450	N.3.3 The operating company shall identify and document the organization of personnel that are responsible for the various elements of the integrity management program, as identified in this Annex, including the following, as appropriate for the type of pipeline system (a) integrity management program development and improvement; (b) records management; (c) integrity management program planning and reporting; (d) implementation of plans; (e) integrity performance indicators; and (f) integrity management program audits, reviews, and evaluations.		
43	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.11, pg. 456	N.11 Integrity management program planning …… N.11.5 Pipeline system integrity management program plans shall include steps for consulting with and informing appropriate personnel about integrity issues and programs.		
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51	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.10.3, pg 456	N.10.3 Imperfections The options that may be used to reduce the frequency of failure and damage incidents associated with imperfections (e.g., metal loss, cracking, and material, manufacturing, and construction defects) include the following, as applicable: ... (b) close-interval surveys; (c) coating assessment surveys; (d) improved performance of cathodic protection systems; (e) repair or rehabilitation of external coatings; (f) improved internal corrosion mitigation and monitoring methods (see Clauses 9.10.2 and 9.10.3); .....(h) in-line inspection programs;		In AB, annually or prior to resumption, all steel and aluminum pipelines are inspected to determine effectiveness of external mitigation, and all operating pipeline are evaluated and documented to determine necessity and suitability for internal corrosion mitigation, and records are kept for 6 years. This is in line with the CSA recommendation to document and implement methods and procedures and to inspect and evaluate by various means as a method of preventing leaks.
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71	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.12, pg. 457	N.12 Inspections, testing, patrols, and monitoring N.12.1 Operating companies shall document and implement the methods and procedures used to conduct inspections, testing, patrols, and monitoring in accordance with Clauses 9 and 10 and, as appropriate, Clause 12. Consideration shall be given to (a) cathodic protection systems; (b) corrosion monitoring systems and devices; ..... N.12.3 When an inspection is performed using indirect methods (e.g., in-line inspection or close-interval surveys) operating companies shall consider whether supplemental inspections using more direct methods are needed. N.12.4 Consideration shall be given to using in-line inspection equipment to detect (a) internal and external corrosion imperfections (see Annex D); .... N.12.5 Operating companies shall document the methods used to detect corrosive agents in the service fluids transported and, where applicable, the methods used to detect and evaluate imperfections caused by internal corrosion (see Clause 9.10). N.12.6 Close-interval and coating-assessment surveys should be considered to assist in investigating the performance of the cathodic protection system and to provide additional information to address corrosion concerns.		
72	CSA Z662-11 Annex N Guidelines for Pipeline System IMP	N.13.2, pg. 458	N.13.2 Evaluation of indications of imperfections N.13.2.1 Except as allowed by Clause N.13.2.2, pipeline systems with indications of imperfections shall be subject to detailed visual inspection, mechanical measurement, nondestructive inspection, as appropriate, for the type of pipeline system and evaluation as specified in Clause 10.10. N.13.2.2 An engineering assessment in accordance with Clause 3.3 may be performed to establish that indications of imperfections are not associated with defects and shall take the following additional items into consideration: (a) knowledge and experience of the performance capabilities and limitations of the inspection method; (b) the types of imperfection that might correspond to the reported indications; (c) the accuracy of reported dimensions and characteristics needed for evaluating such imperfections; (d) the likelihood of unreported defects (e.g., cracking) being associated with an imperfection indication; (e) the piping design and material properties; and (f) service conditions. Notes: (1) The principles described in Clauses D.6 to D.10 for assessing indications of corrosion imperfections detected by in-line inspection should be considered for evaluating other types of imperfection indications detected by in-line inspection. (2) DNV-RP-F101 describes evaluation methods that include uncertainties in the values of reported depth and length measurements for corroded pipe.		
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81					AB REQUIRES a consideration of corrosion monitoring and mitigation when the substance changes. This requirement is not included in Annex N.
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5	Onshore Pipeline Regulations	Part 6, Section 40, Pg. 14	40. A company shall develop a pipeline integrity management program.		Although both require a PIM program, AB EXCEEDS CAN in that it requires the program to be compliant with Annex N.
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33	Onshore Pipeline Regulations	Part 6, Section 46.2, Pg. 16	46. (2) The training program shall instruct the employee on (a) the safety regulations and procedures applicable to the day-to-day operation of the pipeline; (b) responsible environmental practices and procedures in the day-to-day operations of the pipeline; ….		AB is LOWER in that CAN details aspects of safety/environment management such as safety/environment programs, and training/auditing of the programs. AB requires compliancy with Annex N, which requires safety/environment protection be addressed through the PIM program, but (in the Act, regulations and Directives) does not give more detailed information.
34	Onshore Pipeline Regulations	Part 6, Section 47, Pg. 16	47. A company shall develop and implement a safety program to anticipate, prevent, manage and mitigate potentially dangerous conditions and exposure to those conditions during all construction, operation and emergency activities.		
35	Onshore Pipeline Regulations	Part 6, Section 48, Pg. 17	48. A company shall develop and implement an environmental protection program to anticipate, prevent, mitigate and manage conditions which have a potential to adversely affect the environment.		
36	Onshore Pipeline Regulations	Part 9, Section 55, Pg. 19	55. (1) A company shall regularly conduct an audit of its …. (b) safety program developed under section 47; and (c) environmental protection program developed under section 48. …. (2) The documents prepared following the audit shall include (a) any deficiencies noted; and (b) any corrective action taken or planned to be taken.		

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41	Onshore Pipeline Regulations	Part 6, Section 46.3, Pg. 16	46. (3) The company shall use reasonable efforts to ensure that any employee who attends a training program has a working knowledge of the subject-matter of the program at the end of the program.	PIM	AB is LOWER in that CAN details aspects of training programs. AB requires compliancy with Annex N, which requires competency and training be addressed through the PIM program, but (in the Act, regulations and Directives) does not give more detailed information.

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51					AB EXCEEDS CAN in that CAN does not have specific requirements related to corrosion.
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81					AB REQUIRES a consideration of corrosion monitoring and mitigation when the substance changes. CAN does not (in the Act and regulations) have this requirement.
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5	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (c)(1), Pg. 17	(NOTE: Section 60109 refers to pipelines in high-density population areas and environmentally sensitive areas) (c) Risk Analysis and Integrity Management Programs.— (1) Requirement.— Each operator of a gas pipeline facility shall conduct an analysis of the risks to each facility of the operator located in an area identified pursuant to subsection (a)(1) and defined in chapter 192 of title 49, Code of Federal Regulations, including any subsequent modifications, and shall adopt and implement a written integrity management program for such facility to reduce the risks.
6	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (c)(2), Pg. 17	(2) Regulations.— (A) In general.— Not later than 12 months after the date of enactment of this subsection, the Secretary shall issue regulations prescribing standards to direct an operators conduct of a risk analysis and adoption and implementation of an integrity management program under this subsection. The regulations shall require an operator to conduct a risk analysis and adopt an integrity management program within a time period prescribed by the Secretary, ending not later than 24 months after such date of enactment. Not later than 18 months after such date of enactment, each operator of a gas pipeline facility shall begin a baseline integrity assessment described in paragraph (3). (B) Authority to issue regulations.— The Secretary may satisfy the requirements of this paragraph through the issuance of regulations under this paragraph or under other authority of law.
7	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (c)(3), Pg. 18	(3) Minimum requirements of integrity management programs.— An integrity management program required under paragraph (1) shall include, at a minimum, the following requirements: (A) A baseline integrity assessment of each of the operators facilities in areas identified pursuant to subsection (a)(1) and defined in chapter 192 of title 49, Code of Federal Regulations, including any subsequent modifications, by internal inspection device, pressure testing, direct assessment, or an alternative method that the Secretary determines would provide an equal or greater level of safety. The operator shall complete such assessment not later than 10 years after the date of enactment of this subsection. At least 50 percent of such facilities shall be assessed not later than 5 years after such date of enactment. The operator shall prioritize such facilities for assessment based on all risk factors, including any previously discovered defects or anomalies and any history of leaks, repairs, or failures. The operator shall ensure that assessments of facilities with the highest risks are given priority for completion and that such assessments will be completed not later than 5 years after such date of enactment. (B) Subject to paragraph (5), periodic reassessment of the facility, at a minimum of once every 7 years, using methods described in subparagraph (A). (C) Clearly defined criteria for evaluating the results of assessments conducted under subparagraphs (A) and (B) and for taking actions based on such results. (D) A method for conducting an analysis on a continuing basis that integrates all available information about the integrity of the facility and the consequences of releases from the facility. (E) A description of actions to be taken by the operator to promptly address any integrity issue raised by an evaluation conducted under subparagraph (C) or the analysis conducted under subparagraph (D). (F) A description of measures to prevent and mitigate the consequences of releases from the facility. (G) A method for monitoring cathodic protection systems throughout the pipeline system of the operator to the extent not addressed by other regulations. (H) If the Secretary raises a safety concern relating to the facility, a description of the actions to be taken by the operator to address the safety concern, including issues raised with the Secretary by States and local authorities under an agreement entered into under section 60106.
8	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (c)(6-7), Pg. 18	(6) Standards.— The standards prescribed by the Secretary under paragraph (2) shall address each of the following factors: (A) The minimum requirements described in paragraph (3). (B) The type or frequency of inspections or testing of pipeline facilities, in addition to the minimum requirements of paragraph (3)(B). (C) The manner in which the inspections or testing are conducted. (D) The criteria used in analyzing results of the inspections or testing. (E) The types of information sources that must be integrated in assessing the integrity of a pipeline facility as well as the manner of integration. (F) The nature and timing of actions selected to address the integrity of a pipeline facility. (G) Such other factors as the Secretary determines appropriate to ensure that the integrity of a pipeline facility is addressed and that appropriate mitigative measures are adopted to protect areas identified under subsection (a)(1). In prescribing those standards, the Secretary shall ensure that all inspections required are conducted in a manner that minimizes environmental and safety risks, and shall take into account the applicable level of protection established by national consensus standards organizations. (7) Additional optional standards.— The Secretary may also prescribe standards requiring an operator of a pipeline facility to include in an integrity management program under this subsection (A) changes to valves or the establishment or modification of systems that monitor pressure and detect leaks based on the operators risk analysis; and (B) the use of emergency flow restricting devices.
9	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (c)(8), Pg. 18	(8) Lack of regulations.— In the absence of regulations addressing the elements of an integrity management program described in this subsection, the operator of a pipeline facility shall conduct a risk analysis and adopt and implement an integrity management program described in this subsection not later than 24 months after the date of enactment of this subsection and shall complete the baseline integrity assessment described in this subsection not later than 10 years after such date of enactment. At least 50 percent of such facilities shall be assessed not later than 5 years after such date of enactment. The operator shall prioritize such facilities for assessment based on all risk factors, including any previously discovered defects or anomalies and any history of leaks, repairs, or failures. The operator shall ensure that assessments of facilities with the highest risks are given priority for completion and that such assessments will be completed not later than 5 years after such date of enactment.

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10	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (d), Pg. 18	(d) Evaluation of Integrity Management Regulations.— Not later than 4 years after the date of enactment of this subsection, the Comptroller General shall complete an assessment and evaluation of the effects on public safety and the environment of the requirements for the implementation of integrity management programs contained in the standards prescribed as described in subsection (c)(2).
11	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety	Subpart O, 192.907, pg 480	§ 192.907 What must an operator do to implement this subpart? (a) General. No later than December 17, 2004, an operator of a covered pipeline segment must develop and follow a written integrity management program that contains all the elements described in § 192.911 and that addresses the risks on each covered transmission pipeline segment. The initial integrity management program must consist, at a minimum, of a framework that describes the process for implementing each program element, how relevant decisions will be made and by whom, a time line for completing the work to implement the program element, and how information gained from experience will be continuously incorporated into the program. The framework will evolve into a more detailed and comprehensive program. An operator must make continual improvements to the program. (b) Implementation Standards. In carrying out this subpart, an operator must follow the requirements of this subpart and of ASME/ANSI B31.8S (incorporated by reference, see § 192.7) and its appendices, where specified. An operator may follow an equivalent standard or practice only when the operator demonstrates the alternative standard or practice provides an equivalent level of safety to the public and property. In the event of a conflict between this subpart and ASME/ANSI B31.8S, the requirements in this subpart control.
12	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.909, pg 480	§ 192.909 How can an operator change its integrity management program? (a) General. An operator must document any change to its program and the reasons for the change before implementing the change. (b) Notification. An operator must notify OPS, in accordance with § 192.949, of any change to the program that may substantially affect the program's implementation or may significantly modify the program or schedule for carrying out the program elements. An operator must also notify a State or local pipeline safety authority when either a covered segment is located in a State where OPS has an interstate agent agreement, or an intrastate covered segment is regulated by that State. An operator must provide the notification within 30 days after adopting this type of change into its program.
13	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.911, pg 481	192.911 What are the elements of an integrity management program? An operator's initial integrity management program begins with a framework (see § 192.907) and evolves into a more detailed and comprehensive integrity management program, as information is gained and incorporated into the program. An operator must make continual improvements to its program. The initial program framework and subsequent program must, at minimum, contain the following elements. (When indicated, refer to ASME/ANSI B31.8S (incorporated by reference, see § 192.7) for more detailed information on the listed element.) (a) An identification of all high consequence areas, in accordance with § 192.905. (b) A baseline assessment plan meeting the requirements of § 192.919 and § 192.921. (c) An identification of threats to each covered pipeline segment, which must include data integration and a risk assessment. An operator must use the threat identification and risk assessment to prioritize covered segments for assessment (§ 192.917) and to evaluate the merits of additional preventive and mitigative measures (§ 192.935) for each covered segment. (d) A direct assessment plan, if applicable, meeting the requirements of § 192.923, and depending on the threat assessed, of §§ 192.925, 192.927, or 192.929. (e) Provisions meeting the requirements of § 192.933 for remediating conditions found during an integrity assessment. (f) A process for continual evaluation and assessment meeting the requirements of § 192.937. (g) If applicable, a plan for confirmatory direct assessment meeting the requirements of § 192.931. (h) Provisions meeting the requirements of § 192.935 for adding preventive and mitigative measures to protect the high consequence area. (i) A performance plan as outlined in ASME/ANSI B31.8S, section 9 that includes performance measures meeting the requirements of § 192.945. (j) Record keeping provisions meeting the requirements of § 192.947. (k) A management of change process as outlined in ASME/ANSI B31.8S, section 11. (l) A quality assurance process as outlined in ASME/ANSI B31.8S, section 12. (m) A communication plan that includes the elements of ASME/ANSI B31.8S, section 10, and that includes procedures for addressing safety concerns raised by— (1) OPS; and (2) A State or local pipeline safety authority when a covered segment is located in a State where OPS has an interstate agent agreement. (n) Procedures for providing (when requested), by electronic or other means, a copy of the operator's risk analysis or integrity management program to— (1) OPS; and (2) A State or local pipeline safety authority when a covered segment is located in a State where OPS has an interstate agent agreement. (o) Procedures for ensuring that each integrity assessment is being conducted in a manner that minimizes environmental and safety risks. (p) A process for identification and assessment of newly-identified high consequence areas. (See § 192.905 and § 192.921.)

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14	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 f,g, pg 591	195.452 Pipeline integrity management in high consequence areas. ... (f) What are the elements of an integrity management program? An integrity management program begins with the initial framework. An operator must continually change the program to reflect operating experience, conclusions drawn from results of the integrity assessments, and other maintenance and surveillance data, and evaluation of consequences of a failure on the high consequence area. An operator must include, at minimum, each of the following elements in its written integrity management program: (1) A process for identifying which pipeline segments could affect a high consequence area; (2) A baseline assessment plan meeting the requirements of paragraph (c) of this section; (3) An analysis that integrates all available information about the integrity of the entire pipeline and the consequences of a failure (see paragraph (g) of this section); (4) Criteria for remedial actions to address integrity issues raised by the assessment methods and information analysis (see paragraph (h) of this section); (5) A continual process of assessment and evaluation to maintain a pipeline's integrity (see paragraph (j) of this section); (6) Identification of preventive and mitigative measures to protect the high consequence area (see paragraph (i) of this section); (7) Methods to measure the program's effectiveness (see paragraph (k) of this section); (8) A process for review of integrity assessment results and information analysis by a person qualified to evaluate the results and information (see paragraph (h)(2) of this section). (g) What is an information analysis? In periodically evaluating the integrity of each pipeline segment (paragraph (j) of this section), an operator must analyze all available information about the integrity of the entire pipeline and the consequences of a failure. This information includes: (1) Information critical to determining the potential for, and preventing, damage due to excavation, including current and planned damage prevention activities, and development or planned development along the pipeline segment; (2) Data gathered through the integrity assessment required under this section; (3) Data gathered in conjunction with other inspections, tests, surveillance and patrols required by this Part, including, corrosion control monitoring and cathodic protection surveys; and (4) Information about how a failure would affect the high consequence area, such as location of the water intake.
15	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.913, pg 482	192.913 When may an operator deviate its program from certain requirements of this subpart? (a) General. ASME/ANSI B31.8S (incorporated by reference, see § 192.7) provides the essential features of a performance- based or a prescriptive integrity management program. An operator that uses a performance-based approach that satisfies the requirements for exceptional performance in paragraph (b) of this section may deviate from certain requirements in this subpart, as provided in paragraph (c) of this section. (b) Exceptional performance. An operator must be able to demonstrate the exceptional performance of its integrity management program through the following actions. (1) To deviate from any of the requirements set forth in paragraph (c) of this section, an operator must have a performance-based integrity management program that meets or exceed the performance-based requirements of ASME/ANSI B31.8S and includes, at a minimum, the following elements— (i) A comprehensive process for risk analysis; (ii) All risk factor data used to support the program; (iii) A comprehensive data integration process; (iv) A procedure for applying lessons learned from assessment of covered pipeline segments to pipeline segments not covered by this subpart; (v) A procedure for evaluating every incident, including its cause, within the operator's sector of the pipeline industry for implications both to the operator's pipeline system and to the operator's integrity management program; (vi) A performance matrix that demonstrates the program has been effective in ensuring the integrity of the covered segments by controlling the identified threats to the covered segments; (vii) Semi-annual performance measures beyond those required in § 192.945 that are part of the operator's performance plan. (See § 192.911(i).) An operator must submit these measures, by electronic or other means, on a semi-annual frequency to OPS in accordance with § 192.951; and (viii) An analysis that supports the desired integrity reassessment interval and the remediation methods to be used for all covered segments. (2) In addition to the requirements for the performance-based plan, an operator must— (i) Have completed at least two integrity assessments on each covered pipeline segment the operator is including under the performance-based approach, and be able to demonstrate that each assessment effectively addressed the identified threats on the covered segment. (ii) Remediate all anomalies identified in the more recent assessment according to the requirements in § 192.933, and incorporate the results and lessons learned from the more recent assessment into the operator's data integration and risk assessment. (c) Deviation. Once an operator has demonstrated that it has satisfied the requirements of paragraph (b) of this section, the operator may deviate from the prescriptive requirements of ASME/ANSI B31.8S and of this subpart only in the following instances. (1) The time frame for reassessment as provided in § 192.939 except that reassessment by some method allowed under this subpart (e.g., confirmatory direct assessment) must be carried out at intervals no longer than seven years; (2) The time frame for remediation as provided in § 192.933 if the operator demonstrates the time frame will not jeopardize the safety of the covered segment.

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16	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 h, pg 593	195.452 Pipeline integrity management in high consequence areas. ... (h) What actions must an operator take to address integrity issues?—(1) General requirements. An operator must take prompt action to address all anomalous conditions the operator discovers through the integrity assessment or information analysis. In addressing all conditions, an operator must evaluate all anomalous conditions and remediate those that could reduce a pipeline's integrity. An operator must be able to demonstrate that the remediation of the condition will ensure the condition is unlikely to pose a threat to the long-term integrity of the pipeline. An operator must comply with § 195.422 when making a repair. (i) Temporary pressure reduction. ....(ii) Long-term pressure reduction. When a pressure reduction exceeds 365 days, the operator must notify PHMSA in accordance with paragraph (m) of this section and explain the reasons for the delay. An operator must also take further remedial action to ensure the safety of the pipeline. (2) Discovery of condition. Discovery of a condition occurs when an operator has adequate information about the condition to determine that the condition presents a potential threat to the integrity of the pipeline. An operator must promptly, but no later than 180 days after an integrity assessment, obtain sufficient information about a condition to make that determination, unless the operator can demonstrate that the 180-day period is impracticable. (3) Schedule for evaluation and remediation. An operator must complete remediation of a condition according to a schedule prioritizing the conditions for evaluation and remediation. If an operator cannot meet the schedule for any condition, the operator must explain the reasons why it cannot meet the schedule and how the changed schedule will not jeopardize public safety or environmental protection. (4) Special requirements for scheduling remediation—(i) Immediate repair conditions. An operator's evaluation and remediation schedule must provide for immediate repair conditions. To maintain safety, an operator must temporarily reduce operating pressure or shut down the pipeline until the operator completes the repair of these conditions. An operator must calculate the temporary reduction in operating pressure using the formula in Section 451.6.2.2 (b) of ANSI/ASME B31.4 (incorporated by reference, see § 195.3). An operator must treat the following conditions as immediate repair conditions: (A) Metal loss greater than 80% of nominal wall regardless of dimensions. (B) A calculation of the remaining strength of the pipe shows a predicted burst pressure less than the established maximum operating pressure at the location of the anomaly. Suitable remaining strength calculation methods include, but are not limited to, ASME/ ANSI B31G (''Manual for Determining the Remaining Strength of Corroded Pipelines'' (1991) or AGA Pipeline Research Committee Project PR–3–805 (''A Modified Criterion for Evaluating the Remaining Strength of Corroded Pipe'' (December 1989)). These documents are incorporated by reference and are available at the addresses listed in § 195.3. (C) A dent located on the top of the pipeline (above the 4 and 8 o'clock positions) that has any indication of metal loss, cracking or a stress riser. (D) A dent located on the top of the pipeline (above the 4 and 8 o'clock positions) with a depth greater than 6% of the nominal pipe diameter. (E) An anomaly that in the judgment of the person designated by the operator to evaluate the assessment results requires immediate action. (ii) 60-day conditions. Except for conditions listed in paragraph (h)(4)(i) of this section, an operator must schedule evaluation and remediation of the following conditions within 60 days of discovery of condition. (A) A dent located on the top of the pipeline (above the 4 and 8 o'clock positions) with a depth greater than 3% of the pipeline diameter (greater than 0.250 inches in depth for a pipeline diameter less than Nominal Pipe Size (NPS) 12). (B) A dent located on the bottom of the pipeline that has any indication of metal loss, cracking or a stress riser. (iii) 180-day conditions. Except for conditions listed in paragraph (h)(4)(i) or (ii) of this section, an operator must schedule evaluation and remediation of the following within 180 days of discovery of the condition: (A) A dent with a depth greater than 2% of the pipeline's diameter (0.250 inches in depth for a pipeline diameter less than NPS 12) that affects pipe curvature at a girth weld or a longitudinal seam weld. (B) A dent located on the top of the pipeline (above 4 and 8 o'clock position) with a depth greater than 2% of the pipeline's diameter (0.250 inches in depth for a pipeline diameter less than NPS 12). (C) A dent located on the bottom of the pipeline with a depth greater than 6% of the pipeline's diameter.
17			(D) A calculation of the remaining strength of the pipe shows an operating pressure that is less than the current established maximum operating pressure at the location of the anomaly. Suitable remaining strength calculation methods include, but are not limited to, ASME/ANSI B31G (''Manual for Determining the Remaining Strength of Corroded Pipelines'' (1991)) or AGA Pipeline Research Committee Project PR–3–805 (''A Modified Criterion for Evaluating the Remaining Strength of Corroded Pipe'' (December 1989)). These documents are incorporated by reference and are available at the addresses listed in § 195.3. (E) An area of general corrosion with a predicted metal loss greater than 50% of nominal wall. (F) Predicted metal loss greater than 50% of nominal wall that is located at a crossing of another pipeline, or is in an area with widespread circumferential corrosion, or is in an area that could affect a girth weld. (G) A potential crack indication that when excavated is determined to be a crack. (H) Corrosion of or along a longitudinal seam weld. (I) A gouge or groove greater than 12.5% of nominal wall. (iv) Other conditions. In addition to the conditions listed in paragraphs (h)(4)(i) through (iii) of this section, an operator must evaluate any condition identified by an integrity assessment or information analysis that could impair the integrity of the pipeline, and as appropriate, schedule the condition for remediation. Appendix C of this part contains guidance concerning other conditions that an operator should evaluate.
18	Part 192—Transportation of Natural and Other	Subpart O, 192.947(a), pg 497	192.947 What records must an operator keep? An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At minimum, an operator must maintain the following records for review during an inspection. (a) A written integrity management program in accordance with § 192.907;.... ....(d) Documents to support any decision, analysis and process developed and used to implement and evaluate each element of the ... integrity management program. Documents include those developed and used in support of any identification, calculation, amendment, modification, justification, deviation and determination made, and any action taken to implement and evaluate any of the program elements;
19	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 a,b, pg 589	195.452 Pipeline integrity management in high consequence areas. (a) Which pipelines are covered by this section? This section applies to each hazardous liquid pipeline and carbon dioxide pipeline that could affect a high consequence area, including any pipeline located in a high consequence area unless the operator effectively demonstrates by risk assessment that the pipeline could not affect the area. (Appendix C of this part provides guidance on determining if a pipeline could affect a high consequence area.) Covered pipelines are categorized as follows: ..... (b) What program and practices must operators use to manage pipeline integrity? Each operator of a pipeline covered by this section must: (1) Develop a written integrity management program that addresses the risks on each segment of pipeline. ... (2) Include in the program an identification of each pipeline or pipeline segment .... (3) Include in the program a plan to carry out baseline assessments of line pipe as required by paragraph (c) of this section. (4) Include in the program a framework that— (i) Addresses each element of the integrity management program under paragraph (f) of this section, including continual integrity assessment and evaluation under paragraph (j) of this section; and (ii) Initially indicates how decisions will be made to implement each element. (5) Implement and follow the program. (6) Follow recognized industry practices in carrying out this section, unless— (i) This section specifies otherwise; or (ii) The operator demonstrates that an alternative practice is supported by a reliable engineering evaluation and provides an equivalent level of public safety and environmental protection.

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20	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Appendix C, pg 607	APPENDIX C TO PART 195—GUIDANCE FOR IMPLEMENTATION OF AN INTEGRITY MANAGEMENT PROGRAM .....
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22	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (c)(9), Pg. 18	(9) Review of integrity management programs.— (A) Review of programs.— (i) In general.— The Secretary shall review a risk analysis and integrity management program under paragraph (1) and record the results of that review for use in the next review of an operators program. (ii) Context of review.— The Secretary may conduct a review under clause (i) as an element of the Secretarys inspection of an operator. (iii) Inadequate programs.— If the Secretary determines that a risk analysis or integrity management program does not comply with the requirements of this subsection or regulations issued as described in paragraph (2), has not been adequately implemented, or is inadequate for the safe operation of a pipeline facility, the Secretary may conduct proceedings under this chapter. (B) Amendments to programs.— In order to facilitate reviews under this paragraph, an operator of a pipeline facility shall notify the Secretary of any amendment made to the operators integrity management program not later than 30 days after the date of adoption of the amendment. The Secretary shall review any such amendment in accordance with this paragraph. (C) Transmittal of programs to state authorities.— The Secretary shall provide a copy of each risk analysis and integrity management program reviewed by the Secretary under this paragraph to any appropriate State authority with which the Secretary has entered into an agreement under section 60106.

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23	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (c)(10-11), Pg. 18	(10) State review of integrity management plans.— A State authority that enters into an agreement pursuant to section 60106, permitting the State authority to review the risk analysis and integrity management program pursuant to paragraph (9), may provide the Secretary with a written assessment of the risk analysis and integrity management program, make recommendations, as appropriate, to address safety concerns not adequately addressed by the operators risk analysis or integrity management program, and submit documentation explaining the State-proposed revisions. The Secretary shall consider carefully the States proposals and work in consultation with the States and operators to address safety concerns.
24	Title 49 - US Code - Chapter 601 - Safety	Section 60109 (f), Pg. 21	(f) Certification of Pipeline Integrity Management Program Performance.— The Secretary shall establish procedures requiring certification of annual and semiannual pipeline integrity management program performance reports by a senior executive officer of the company operating a pipeline subject to this chapter.
25	Part 192—Transportation of Natural and Other Gas by	Subpart O, 192.945, pg 496	192.945 What methods must an operator use to measure program effectiveness? (a) General. An operator must include in its integrity management program methods to measure whether the program is effective in assessing and evaluating the integrity of each covered pipeline segment and in protecting the high consequence areas. These measures must include the four overall performance measures specified in ASME/ ANSI B31.8S (incorporated by reference, see § 192.7 of this part), section 9.4, and the specific measures for each identified threat specified in ASME/ ANSI B31.8S, Appendix A. An operator must submit the four overall performance measures as part of the annual report required by § 191.17 of this subchapter. (b) External Corrosion Direct assessment. In addition to the general requirements for performance measures in paragraph (a) of this section, an operator using direct assessment to assess the external corrosion threat must define and monitor measures to determine the effectiveness of the ECDA process. These measures must meet the requirements of § 192.925.

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26	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.452 k, pg 595	195.452 Pipeline integrity management in high consequence areas. ... (k) What methods to measure program effectiveness must be used? An operator's program must include methods to measure whether the program is effective in assessing and evaluating the integrity of each pipeline segment and in protecting the high consequence areas. See Appendix C of this part for guidance on methods that can be used to evaluate a program's effectiveness. ....
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33	Title 49 - US Code - Chapter 601 - Safety	Section 60131 (a), Pg. 42	(a) In General.— Subject to the requirements of this section, the Secretary of Transportation shall require the operator of a pipeline facility to develop and adopt a qualification program to ensure that the individuals who perform covered tasks are qualified to conduct such tasks. (b) Standards and Criteria.— .... (2) Contents.— The standards and criteria shall include the following: (A) The establishment of methods for evaluating the acceptability of the qualifications of individuals described in subsection (a). (B) A requirement that pipeline operators develop and implement written plans and procedures to qualify individuals described in subsection (a) to a level found acceptable using the methods established under subparagraph (A) and evaluate the abilities of individuals described in subsection (a) according to such methods. (C) A requirement that the plans and procedures adopted by a pipeline operator under subparagraph (B) be reviewed and verified under subsection (e).
34	Title 49 - US Code - Chapter 601 - Safety	Section 60131 (d), Pg. 42	(d) Elements of Qualification Programs.— http://openjurist.org/print/book/export/html/13431463[10/23/2012 2:51:55 PM] A qualification program adopted by an operator under subsection (a) shall include, at a minimum, the following elements: (1) A method for examining or testing the qualifications of individuals described in subsection (a). The method may include written examination, oral examination, observation during on-the-job performance, on-the-job training, simulations, and other forms of assessment. The method may not be limited to observation of on-the-job performance, except with respect to tasks for which the Secretary has determined that such observation is the best method of examining or testing qualifications. The Secretary shall ensure that the results of any such observations are documented in writing. (2) A requirement that the operator complete the qualification of all individuals described in subsection (a) not later than 18 months after the date of adoption of the qualification program. (3) A periodic requalification component that provides for examination or testing of individuals in accordance with paragraph (1). (4) A program to provide training, as appropriate, to ensure that individuals performing covered tasks have the necessary knowledge and skills to perform the tasks in a manner that ensures the safe operation of pipeline facilities.
35	Title 49 - US Code - Chapter 601 - Safety	Section 60131 (e), Pg. 43	(e) Review and Verification of Programs.— (1) In general.— The Secretary shall review the qualification program of each pipeline operator and verify its compliance with the standards and criteria described in subsection (b) and that it includes the elements described in subsection (d). The Secretary shall record the results of that review for use in the next review of an operators program. (2) Deadline for completion.— Reviews and verifications under this subsection shall be completed not later than 3 years after the date of the enactment of this section. (3) Inadequate programs.— If the Secretary decides that a qualification program is inadequate for the safe operation of a pipeline facility, the Secretary shall act as under section 60108 (a)(2) to require the operator to revise the qualification program. (4) Program modifications.— If the operator of a pipeline facility significantly modifies a program that has been verified under this subsection, the operator shall notify the Secretary of the modifications. The Secretary shall review and verify such modifications in accordance with paragraph (1). (5) Waivers and modifications.— In accordance with section 60118 (c), the Secretary may waive or modify any requirement of this section if the waiver or modification is not inconsistent with pipeline safety. (6) Inaction by the secretary.— Notwithstanding any failure of the Secretary to prescribe standards and criteria as described in subsection (b), an operator of a pipeline facility shall develop and adopt a qualification program that complies with the requirement of subsection (b)(2)(B) and includes the elements described in subsection (d) not later than 2 years after the date of enactment of this section.
36	Title 49 - US Code - Chapter 601 - Safety	Section 60105 (e), Pg. 11	(e) Monitoring.— The Secretary may monitor a safety program established under this section to ensure that the program complies with the certification. A State authority shall cooperate with the Secretary under this subsection.

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41	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart N, 192.805, pg 477	192.805 Qualification program. Each operator shall have and follow a written qualification program. The program shall include provisions to: (a) Identify covered tasks; (b) Ensure through evaluation that individuals performing covered tasks are qualified; (c) Allow individuals that are not qualified pursuant to this subpart to perform a covered task if directed and observed by an individual that is qualified; (d) Evaluate an individual if the operator has reason to believe that the individual's performance of a covered task contributed to an incident as defined in Part 191; (e) Evaluate an individual if the operator has reason to believe that the individual is no longer qualified to perform a covered task; (f) Communicate changes that affect covered tasks to individuals performing those covered tasks; (g) Identify those covered tasks and the intervals at which evaluation of the individual's qualifications is needed; (h) After December 16, 2004, provide training, as appropriate, to ensure that individuals performing covered tasks have the necessary knowledge and skills to perform the tasks in a manner that ensures the safe operation of pipeline facilities; and (i) After December 16, 2004, notify the Administrator or a state agency participating under 49 U.S.C. Chapter 601 if the operator significantly modifies the program after the Administrator or state agency has verified that it complies with this section.

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42	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart N, 192.807, pg 478	192.807 Recordkeeping. Each operator shall maintain records that demonstrate compliance with this subpart. (a) Qualification records shall include: (1) Identification of qualified individual(s); (2) Identification of the covered tasks the individual is qualified to perform; (3) Date(s) of current qualification; and (4) Qualification method(s). (b) Records supporting an individual's current qualification shall be maintained while the individual is performing the covered task. Records of prior qualification and records of individuals no longer performing covered tasks shall be retained for a period of five years.
43	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart F, Section 195.408, pg 582	195.408 Communications. (a) Each operator must have a communication system to provide for the transmission of information needed for the safe operation of its pipeline system. (b) The communication system required by paragraph (a) of this section must, as a minimum, include means for: (1) Monitoring operational data as required by § 195.402(c)(9); (2) Receiving notices from operator personnel, the public, and public authorities of abnormal or emergency conditions and sending this information to appropriate personnel or government agencies for corrective action; (3) Conducting two-way vocal communication between a control center and the scene of abnormal operations and emergencies; and (4) Providing communication with fire, police, and other appropriate public officials during emergency conditions, including a natural disaster.
44	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.505, pg 596	195.505 Qualification program. Each operator shall have and follow a written qualification program. The program shall include provisions to: (a) Identify covered tasks; (b) Ensure through evaluation that individuals performing covered tasks are qualified; (c) Allow individuals that are not qualified pursuant to this subpart to perform a covered task if directed and observed by an individual that is qualified; (d) Evaluate an individual if the operator has reason to believe that the individual's performance of a covered task contributed to an accident as defined in Part 195; (e) Evaluate an individual if the operator has reason to believe that the individual is no longer qualified to perform a covered task; (f) Communicate changes that affect covered tasks to individuals performing those covered tasks; (g) Identify those covered tasks and the intervals at which evaluation of the individual's qualifications is needed; (h) After December 16, 2004, provide training, as appropriate, to ensure that individuals performing covered tasks have the necessary knowledge and skills to perform the tasks in a manner that ensures the safe operation of pipeline facilities; and (i) After December 16, 2004, notify the Administrator or a state agency participating under 49 U.S.C. Chapter 601 if the operator significantly modifies the program after the Administrator or state agency has verified that it complies with this section.
45	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.507, pg 596	195.507 Recordkeeping. Each operator shall maintain records that demonstrate compliance with this subpart. (a) Qualification records shall include: (1) Identification of qualified individual(s); (2) Identification of the covered tasks the individual is qualified to perform; (3) Date(s) of current qualification; and (4) Qualification method(s). (b) Records supporting an individual's current qualification shall be maintained while the individual is performing the covered task. Records of prior qualification and records of individuals no longer performing covered tasks shall be retained for a period of five years.

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46	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart N, 192.809, pg 478	192.809 General. (a) Operators must have a written qualification program by April 27, 2001. The program must be available for review by the Administrator or by a state agency participating under 49 U.S.C. Chapter 601 if the program is under the authority of that state agency. (b) Operators must complete the qualification of individuals performing covered tasks by October 28, 2002. (c) Work performance history review may be used as a sole evaluation method for individuals who were performing a covered task prior to October 26, 1999. (d) After October 28, 2002, work performance history may not be used as a sole evaluation method. (e) After December 16, 2004, observation of on-the-job performance may not be used as the sole method of evaluation.
47	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.915, pg 482	192.915 What knowledge and training must personnel have to carry out an integrity management program? (a) Supervisory personnel. The integrity management program must provide that each supervisor whose responsibilities relate to the integrity management program possesses and maintains a thorough knowledge of the integrity management program and of the elements for which the supervisor is responsible. The program must provide that any person who qualifies as a supervisor for the integrity management program has appropriate training or experience in the area for which the person is responsible. (b) Persons who carry out assessments and evaluate assessment results. The integrity management program must provide criteria for the qualification of any person— (1) Who conducts an integrity assessment allowed under this subpart; or (2) Who reviews and analyzes the results from an integrity assessment and evaluation; or (3) Who makes decisions on actions to be taken based on these assessments. (c) Persons responsible for preventive and mitigative measures. The integrity management program must provide criteria for the qualification of any person— (1) Who implements preventive and mitigative measures to carry out this subpart, including the marking and locating of buried structures; or (2) Who directly supervises excavation work carried out in conjunction with an integrity assessment.
48	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.947(e), pg 497	192.947 What records must an operator keep? An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At minimum, an operator must maintain the following records for review during an inspection. ....(e) Documents that demonstrate personnel have the required training, including a description of the training program, in accordance with § 192.915;....
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50	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart I, 192.455, pg 443	§ 192.455 External corrosion control: Buried or submerged pipelines installed after July 31, 1971. the following: (a) Except as provided in paragraphs (b), (c), and (f) of this section, each buried or submerged pipeline installed after July 31, 1971, must be protected against external corrosion, including the following: (1) It must have an external protective coating ... (2) It must have a cathodic protection system ... (b) An operator need not comply with paragraph (a) of this section, if the operator can demonstrate by tests, investigation, or experience in the area of application, ... that a corrosive environment does not exist. However, within 6 months after an installation made pursuant to the preceding sentence, the operator shall conduct tests, ... to adequately evaluate the potential profile along the entire pipeline. .... (c) An operator need not comply with paragraph (a) of this section, if the operator can demonstrate by tests, investigation, or experience that— (1) For a copper pipeline, a corrosive environment does not exist; or (2) For a temporary pipeline with an operating period of service not to exceed 5 years beyond installation, corrosion during the 5-year period of service of the pipeline will not be detrimental to public safety. (d) Notwithstanding the provisions of paragraph (b) or (c) of this section, if a pipeline is externally coated, it must be cathodically protected in accordance with paragraph (a)(2) of this section. ....

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51	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart I, 192.457, pg 444	§ 192.457 External corrosion control: Buried or submerged pipelines installed before August 1, 1971. (a) ... each buried or submerged transmission line ...., that has an effective external coating must be cathodically protected along the entire area that is effectively coated, in accordance with this subpart.
52	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.557, pg 597	195.557 Which pipelines must have coating for external corrosion control? Except bottoms of aboveground breakout tanks, each buried or submerged pipeline must have an external coating for external corrosion control if the pipeline is— (a) Constructed, relocated, replaced, or otherwise changed after the applicable date in § 195.401(c), not including the movement of pipe covered by § 195.424; or (b) Converted under § 195.5 and— (1) Has an external coating that substantially meets § 195.559 before the pipeline is placed in service; or (2) Is a segment that is relocated, replaced, or substantially altered.
53	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.561, pg 598	195.561 When must I inspect pipe coating used for external corrosion control? (a) You must inspect all external pipe coating required by § 195.557 just prior to lowering the pipe into the ditch or submerging the pipe. (b) You must repair any coating damage discovered.
54	Part 195—Transportation of Hazardous Liquids	Subpart G, Section 195.559, pg 597	195.559 What coating material may I use for external corrosion control? Coating material for external corrosion control under § 195.557 must— (a) Be designed to mitigate corrosion of the buried or submerged pipeline; (b) Have sufficient adhesion to the metal surface to prevent under film migration of moisture; A pipeline does not have an effective external coating material if the current required to cathodically protect the pipeline is substantially the same as if the pipeline were bare. (c) Be sufficiently ductile to resist cracking; (d) Have enough strength to resist damage due to handling and soil stress; (e) Support any supplemental cathodic protection; and (f) If the coating is an insulating type, have low moisture absorption and provide high electrical resistance.
55	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart I, 192.463, pg 445	192.463 External corrosion control: Cathodic protection. (a) Each cathodic protection system required by this subpart must provide a level of cathodic protection that complies with one or more of the applicable criteria contained in appendix D of this part. If none of these criteria is applicable, the cathodic protection system must provide a level of cathodic protection at least equal to that provided by compliance with one or more of these criteria. (b) If amphoteric metals are included in a buried or submerged pipeline containing a metal of different anodic potential— (1) The amphoteric metals must be electrically isolated from the remainder of the pipeline and cathodically protected; or (2) The entire buried or submerged pipeline must be cathodically protected at a cathodic potential that meets the requirements of appendix D of this part for amphoteric metals. (c) The amount of cathodic protection must be controlled so as not to damage the protective coating or the pipe.

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56	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.563, pg 598	195.563 Which pipelines must have cathodic protection? (a) Each buried or submerged pipeline that is constructed, relocated, replaced, or otherwise changed after the applicable date in § 195.401(c) must have cathodic protection. The cathodic protection must be in operation not later than 1 year after the pipeline is constructed, relocated, replaced, or otherwise changed, as applicable. (b) Each buried or submerged pipeline converted under § 195.5 must have cathodic protection if the pipeline— (1) Has cathodic protection that substantially meets § 195.571 before the pipeline is placed in service; or (2) Is a segment that is relocated, replaced, or substantially altered. (c) All other buried or submerged pipelines that have an effective external coating must have cathodic protection. 1 Except as provided by paragraph (d) of this section, this requirement does not apply to breakout tanks and does not apply to buried piping in breakout tank areas and pumping stations until December 29, 2003. (d) Bare pipelines, breakout tank areas, and buried pumping station piping must have cathodic protection in places where regulations in effect before January 28, 2002 required cathodic protection as a result of electrical inspections. See previous editions of this part in 49 CFR, parts 186 to 199. (e) Unprotected pipe must have cathodic protection if required by § 195.573(b).
57	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.571, pg 599	195.571 What criteria must I use to determine the adequacy of cathodic protection? Cathodic protection required by this Subpart must comply with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of NACE SP 0169 (incorporated by reference, see § 195.3).
58	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart I, 192.465, pg 445	192.465 External corrosion control: Monitoring. (a) Each pipeline that is under cathodic protection must be tested at least once each calendar year, but with intervals not exceeding 15 months, to determine whether the cathodic protection meets the requirements of § 192.463. However, if tests at those intervals are impractical for separately protected short sections of mains or transmission lines, not in excess of 100 feet (30 meters), or separately protected service lines, these pipelines may be surveyed on a sampling basis. At least 10 percent of these protected structures, distributed over the entire system must be surveyed each calendar year, with a different 10 percent checked each subsequent year, so that the entire system is tested in each 10– year period. (b) Each cathodic protection rectifier or other impressed current power source must be inspected six times each calendar year, but with intervals not exceeding 21⁄2 months, to insure that it is operating. (c) Each reverse current switch, each diode, and each interference bond whose failure would jeopardize structure protection must be electrically checked for proper performance six times each calendar year, but with intervals not exceeding 21⁄2 months. Each other interference bond must be checked at least once each calendar year, but with intervals not exceeding 15 months. (d) Each operator shall take prompt remedial action to correct any deficiencies indicated by the monitoring. (e) After the initial evaluation required by §§ 192.455(b) and (c) and 192.457(b), each operator must, not less than every 3 years at intervals not exceeding 39 months, reevaluate its unprotected pipelines and cathodically protect them in accordance with this subpart in areas in which active corrosion is found. The operator must determine the areas of active corrosion by electrical survey. However, on distribution lines and where an electrical survey is impractical on transmission lines, areas of active corrosion may be determined by other means that include review and analysis of leak repair and inspection records, corrosion monitoring records, exposed pipe inspection records, and the pipeline environment.

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59	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.573, pg 599	195.573 What must I do to monitor external corrosion control? (a) Protected pipelines. You must do the following to determine whether cathodic protection required by this subpart complies with § 195.571: (1) Conduct tests on the protected pipeline at least once each calendar year, but with intervals not exceeding 15 months. However, if tests at those intervals are impractical for separately protected short sections of bare or ineffectively coated pipelines, testing may be done at least once every 3 calendar years, but with intervals not exceeding 39 months. (2) Identify not more than 2 years after cathodic protection is installed, the circumstances in which a close-interval survey or comparable technology is practicable and necessary to accomplish the objectives of paragraph 10.1.1.3 of NACE SP 0169 (incorporated by reference, see § 195.3). (b) Unprotected pipe. You must reevaluate your unprotected buried or submerged pipe and cathodically protect the pipe in areas in which active corrosion is found, as follows: (1) Determine the areas of active corrosion by electrical survey, or where an electrical survey is impractical, by other means that include review and analysis of leak repair and inspection records, corrosion monitoring records, exposed pipe inspection records, and the pipeline environment. (2) For the period in the first column, the second column prescribes the frequency of evaluation.
60	Part 192—Transportation of	Subpart I, 192.469, pg 446	192.469 External corrosion control: Test stations. Each pipeline under cathodic protection required by this subpart must have sufficient test stations or other contact points for electrical measurement to determine the adequacy of cathodic protection.
61	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal	Subpart I, 192.471, pg 446	192.471 External corrosion control: Test leads. (a) Each test lead wire must be connected to the pipeline so as to remain mechanically secure and electrically conductive. (b) Each test lead wire must be attached to the pipeline so as to minimize stress concentration on the pipe. (c) Each bared test lead wire and bared metallic area at point of connection to the pipeline must be coated with an electrical insulating material compatible with the pipe coating and the insulation on the wire.
62	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.567, pg 598	195.567 Which pipelines must have test leads and what must I do to install and maintain the leads? (a) General. Except for offshore pipelines, each buried or submerged pipeline or segment of pipeline under cathodic protection required by this subpart must have electrical test leads for external corrosion control. However, this requirement does not apply until December 27, 2004 to pipelines or pipeline segments on which test leads were not required by regulations in effect before January 28, 2002. (b) Installation. You must install test leads as follows: (1) Locate the leads at intervals frequent enough to obtain electrical measurements indicating the adequacy of cathodic protection. (2) Provide enough looping or slack so backfilling will not unduly stress or break the lead and the lead will otherwise remain mechanically secure and electrically conductive. (3) Prevent lead attachments from causing stress concentrations on pipe. (4) For leads installed in conduits, suitably insulate the lead from the conduit. (5) At the connection to the pipeline, coat each bared test lead wire and bared metallic area with an electrical insulating material compatible with the pipe coating and the insulation on the wire. (c) Maintenance. You must maintain the test lead wires in a condition that enables you to obtain electrical measurements to determine whether cathodic protection complies with § 195.571.
63	Part 192—Transportation of Natural and Other Gas	Subpart I, 192.473, pg 446	§ 192.473 External corrosion control: Interference currents. (a) Each operator whose pipeline system is subjected to stray currents shall have in effect a continuing program to minimize the detrimental effects of such currents. (b) Each impressed current type cathodic protection system or galvanic anode system must be designed and installed so as to minimize any adverse effects on existing adjacent underground metallic structures.
64	Part 195—Transportation of Hazardous Liquids by	Subpart G, Section 195.577, pg 600	195.577 What must I do to alleviate interference currents? (a) For pipelines exposed to stray currents, you must have a program to identify, test for, and minimize the detrimental effects of such currents. (b) You must design and install each impressed current or galvanic anode system to minimize any adverse effects on existing adjacent metallic structures.
65	Part 192—Transportation of Natural and	Subpart I, 192.483, pg 448	192.483 Remedial measures: General. (a) Each segment of metallic pipe that replaces pipe removed from a buried or submerged pipeline because of external corrosion must have a properly prepared surface and must be provided with an external protective coating that meets the requirements of § 192.461. (b) Each segment of metallic pipe that replaces pipe removed from a buried or submerged pipeline because of external corrosion must be cathodically protected in accordance with this subpart. (c) Except for cast iron or ductile iron pipe, each segment of buried or submerged pipe that is required to be repaired because of external corrosion must be cathodically protected in accordance with this subpart.

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66	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.925, pg 486	192.925 What are the requirements for using External Corrosion Direct Assessment (ECDA)? (a) Definition. ECDA is a four-step process that combines preassessment, indirect inspection, direct examination, and post assessment to evaluate the threat of external corrosion to the integrity of a pipeline. (b) General requirements. An operator that uses direct assessment to assess the threat of external corrosion must follow the requirements in this section, in ASME/ANSI B31.8S (incorporated by reference, see § 192.7), section 6.4, and in NACE SP0502–2008 (incorporated by reference, see § 192.7). An operator must develop and implement a direct assessment plan that has procedures addressing preassessment, indirect examination, direct examination, and post-assessment. If the ECDA detects pipeline coating damage, the operator must also integrate the data from the ECDA with other information from the data integration (§ 192.917(b)) to evaluate the covered segment for the threat of third party damage, and to address the threat as required by § 192.917(e)(1). (1) Preassessment. In addition to the requirements in ASME/ANSI B31.8S section 6.4 and NACE SP0502–2008, section 3, the plan's procedures for preassessment must include— (i) Provisions for applying more restrictive criteria when conducting ECDA for the first time on a covered segment; and (ii) The basis on which an operator selects at least two different, but complementary indirect assessment tools to assess each ECDA Region. If an operator utilizes an indirect inspection method that is not discussed in Appendix A of NACE SP0502–2008, the operator must demonstrate the applicability, validation basis, equipment used, application procedure, and utilization of data for the inspection method. (2) Indirect examination. In addition to the requirements in ASME/ANSI B31.8S section 6.4 and NACE SP0502–2008, section 4, the plan's procedures for indirect examination of the ECDA regions must include— (i) Provisions for applying more restrictive criteria when conducting for the first time on a covered segment; (ii) Criteria for identifying and documenting those indications that must be considered for excavation and direct examination. Minimum identification criteria include the known sensitivities of assessment tools, the procedures for using each tool, and the approach to be used for decreasing the physical spacing of indirect assessment tool readings when the presence of a defect is suspected; (iii) Criteria for defining the urgency of excavation and direct examination of each indication identified during the indirect examination. These criteria must specify how an operator will define the urgency of excavating the indication as immediate, scheduled or monitored; and (iv) Criteria for scheduling excavation of indications for each urgency level. (3) Direct examination. In addition to the requirements in ASME/ANSI B31.8S section 6.4 and NACE SP0502–2008, section 5, the plan's procedures for direct examination of indications from the indirect examination must include— (i) Provisions for applying more restrictive criteria when conducting ECDA for the first time on a covered segment; (ii) Criteria for deciding what action should be taken if either: (A) Corrosion defects are discovered that exceed allowable limits (Section 5.5.2.2 of NACE SP0502–2008), or (B) Root cause analysis reveals conditions for which ECDA is not suitable (Section 5.6.2 of NACE SP0502–2008); (iii) Criteria and notification procedures for any changes in the ECDA Plan, including changes that affect the severity classification, the priority of direct examination, and the time frame for direct examination of indications; and (iv) Criteria that describe how and on what basis an operator will reclassify and reprioritize any of the provisions that are specified in section 5.9 of NACE SP0502–2008. (4) Post assessment and continuing evaluation. In addition to the requirements in ASME/ANSI B31.8S section 6.4 and NACE SP0502–2008, section 6, the plan's procedures for post assessment of the effectiveness of the ECDA process must include— (i) Measures for evaluating the longterm effectiveness of ECDA in addressing external corrosion in covered segments; and (ii) Criteria for evaluating whether conditions discovered by direct examination of indications in each ECDA region indicate a need for reassessment of the covered segment at an interval less than that specified in § 192.939. (See Appendix D of NACE SP0502–2008.)
67	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.588, pg 601	195.588 What standards apply to direct assessment? …. (b) The requirements for performing external corrosion direct assessment are as follows: (1) General. You must follow the requirements of NACE SP0502 (incorporated by reference, see § 195.3). Also, you must develop and implement a External Corrosion Direct Assessment (ECDA) plan that includes procedures addressing pre-assessment, indirect examination, direct examination, and post-assessment. (2) Pre-assessment. In addition to the requirements in Section 3 of NACE SP0502 (incorporated by reference, see § 195.3), the ECDA plan procedures for pre-assessment must include— (i) Provisions for applying more restrictive criteria when conducting ECDA for the first time on a pipeline segment; (ii) The basis on which you select at least two different, but complementary, indirect assessment tools to assess each ECDA region; and (iii) If you utilize an indirect inspection method not described in Appendix A of NACE SP0502 (incorporated by reference, see § 195.3), you must demonstrate the applicability, validation basis, equipment used, application procedure, and utilization of data for the inspection method. (3) Indirect examination. In addition to the requirements in Section 4 of NACE SP0502 (incorporated by reference, see § 195.3), the procedures for indirect examination of the ECDA regions must include— (i) Provisions for applying more restrictive criteria when conducting ECDA for the first time on a pipeline segment; (ii) Criteria for identifying and documenting those indications that must be considered for excavation and direct examination, including at least the following: (A) The known sensitivities of assessment tools; (B) The procedures for using each tool; and (C) The approach to be used for decreasing the physical spacing of indirect assessment tool readings when the presence of a defect is suspected; (iii) For each indication identified during the indirect examination, criteria for— (A) Defining the urgency of excavation and direct examination of the indication; and (B) Defining the excavation urgency as immediate, scheduled, or monitored; and (iv) Criteria for scheduling excavations of indications in each urgency level. (4) Direct examination. In addition to the requirements in Section 5 of NACE SP0502 (incorporated by reference, see § 195.3), the procedures for direct examination of indications from the indirect examination must include— (i) Provisions for applying more restrictive criteria when conducting ECDA for the first time on a pipeline segment; (ii) Criteria for deciding what action should be taken if either: (A) Corrosion defects are discovered that exceed allowable limits (Section 5.5.2.2 of NACE SP0502 (incorporated by reference, see § 195.3) provides guidance for criteria); or (B) Root cause analysis reveals conditions for which ECDA is not suitable (Section 5.6.2 of NACE SP0502 (incorporated by reference, see § 195.3) provides guidance for criteria); (iii) Criteria and notification procedures for any changes in the ECDA plan, including changes that affect the severity classification, the priority of direct examination, and the time frame for direct examination of indications; and (iv) Criteria that describe how and on what basis you will reclassify and reprioritize any of the provisions specified in Section 5.9 of NACE SP0502 (incorporated by reference, see § 195.3). (5) Post assessment and continuing evaluation. In addition to the requirements in Section 6 of NACE SP 0502 (incorporated by reference, see § 195.3), the procedures for post assessment of the effectiveness of the ECDA process must include— (i) Measures for evaluating the longterm effectiveness of ECDA in addressing external corrosion in pipeline segments; and (ii) Criteria for evaluating whether conditions discovered by direct examination of indications in each ECDA region indicate a need for reassessment of the pipeline segment at an interval less than that specified in Sections 6.2 and 6.3 of NACE SP0502 (see appendix D of NACE SP0502) (incorporated by reference, see § 195.3).

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68	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.929, pg 489	192.929 What are the requirements for using Direct Assessment for Stress Corrosion Cracking (SCCDA)? (a) Definition. Stress Corrosion Cracking Direct Assessment (SCCDA) is a process to assess a covered pipe segment for the presence of SCC primarily by systematically gathering and analyzing excavation data for pipe having similar operational characteristics and residing in a similar physical environment. (b) General requirements. An operator using direct assessment as an integrity assessment method to address stress corrosion cracking in a covered pipeline segment must have a plan that provides, at minimum, for— (1) Data gathering and integration. An operator's plan must provide for a systematic process to collect and evaluate data for all covered segments to identify whether the conditions for SCC are present and to prioritize the covered segments for assessment. This process must include gathering and evaluating data related to SCC at all sites an operator excavates during the conduct of its pipeline operations where the criteria in ASME/ANSI B31.8S (incorporated by reference, see § 192.7), appendix A3.3 indicate the potential for SCC. This data includes at minimum, the data specified in ASME/ANSI B31.8S, appendix A3. (2) Assessment method. The plan must provide that if conditions for SCC are identified in a covered segment, an operator must assess the covered segment using an integrity assessment method VerDate Mar<15>2010 14:56 Jan 03, 2012 Jkt 223216 PO 00000 Frm 00501 Fmt 8010 Sfmt 8010 Y:\SGML\223216.XXX 223216 wreier-aviles on DSK3TPTVN1PROD with CFR 490 § 192.931 49 CFR Ch. I (10–1–11 Edition) specified in ASME/ANSI B31.8S, appendix A3, and remediate the threat in accordance with ASME/ANSI B31.8S, appendix A3, section A3.4.
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71	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart I, 192.475, pg 447	192.475 Internal corrosion control: General. .... (b) Whenever any pipe is removed from a pipeline for any reason, the internal surface must be inspected for evidence of corrosion. If internal corrosion is found— (1) The adjacent pipe must be investigated to determine the extent of internal corrosion; (2) Replacement must be made to the extent required by the applicable paragraphs of §§ 192.485, 192.487, or 192.489; and (3) Steps must be taken to minimize the internal corrosion. (c) Gas containing more than 0.25 grain of hydrogen sulfide per 100 cubic feet (5.8 milligrams/m.3) at standard conditions (4 parts per million) may not be stored in pipe-type or bottletype holders.
72	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.579, pg 600	§ 195.579 What must I do to mitigate internal corrosion? (a) General. If you transport any hazardous liquid or carbon dioxide that would corrode the pipeline, you must investigate the corrosive effect of the hazardous liquid or carbon dioxide on the pipeline and take adequate steps to mitigate internal corrosion. (b) Inhibitors. If you use corrosion inhibitors to mitigate internal corrosion, you must— (1) Use inhibitors in sufficient quantity to protect the entire part of the pipeline system that the inhibitors are designed to protect; (2) Use coupons or other monitoring equipment to determine the effectiveness of the inhibitors in mitigating internal corrosion; and (3) Examine the coupons or other monitoring equipment at least twice each calendar year, but with intervals not exceeding 7½ months. (c) Removing pipe. Whenever you remove pipe from a pipeline, you must inspect the internal surface of the pipe for evidence of corrosion. If you find internal corrosion requiring corrective action under § 195.585, you must investigate circumferentially and longitudinally beyond the removed pipe (by visual examination, indirect method, or both) to determine whether additional corrosion requiring remedial action exists in the vicinity of the removed pipe.
73	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart I, 192.477, pg 447	192.477 Internal corrosion control: Monitoring. If corrosive gas is being transported, coupons or other suitable means must be used to determine the effectiveness of the steps taken to minimize internal corrosion. Each coupon or other means of monitoring internal corrosion must be checked two times each calendar year, but with intervals not exceeding 7½ months

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74	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.927, pg 487	192.927 What are the requirements for using Internal Corrosion Direct Assessment (ICDA)? (a) Definition. Internal Corrosion Direct Assessment (ICDA) is a process an operator uses to identify areas along the pipeline where fluid or other electrolyte introduced during normal operation or by an upset condition may reside, & then focuses direct examination on the locations in covered segments where internal corrosion is most likely to exist. The process identifies the potential for internal corrosion caused by microorganisms, or fluid with CO2, O2, hydrogen sulfide or other contaminants present in the gas. (b) General requirements. An operator using direct assessment as an assessment method to address internal corrosion in a covered pipeline segment must follow the requirements in this section and in ASME/ANSI B31.8S (incorporated by reference, see § 192.7), section 6.4 and appendix B2. The ICDA process described in this section applies only for a segment of pipe transporting nominally dry natural gas, & not for a segment with electrolyte nominally present in the gas stream. If an operator uses ICDA to assess a covered segment operating with electrolyte present in the gas stream, the operator must develop a plan that demonstrates how it will conduct ICDA in the segment to effectively address internal corrosion, & must provide notification in accordance with §192.921 (a)(4) or §192.937(c)(4). (c) The ICDA plan. An operator must develop & follow an ICDA plan that VerDate Mar<15>2010 14:56 Jan 03, 2012 Jkt 223216 PO 00000 Frm 00499 Fmt 8010 Sfmt 8010 Y:\SGML\223216.XXX 223216 wreier-aviles on DSK3TPTVN1PROD with CFR 488 §192.927 49 CFR Ch. I (10–1–11 Edition) provides for preassessment, identification of ICDA regions & excavation locations, detailed examination of pipe at excavation locations, & post-assessment evaluation & monitoring. (1) Preassessment. In the preassessment stage, an operator must gather & integrate data & information needed to evaluate the feasibility of ICDA for the covered segment, & to support use of a model to identify the locations along the pipe segment where electrolyte may accumulate, to identify ICDA regions, & to identify areas within the covered segment where liquids may potentially be entrained. This data & information includes, but is not limited to— (i) All data elements listed in appendix A2 of ASME/ANSI B31.8S; (ii) Information needed to support use of a model that an operator must use to identify areas along the pipeline where internal corrosion is most likely to occur. (See paragraph (a) of this section.) This information, includes, but is not limited to, location of all gas input & withdrawal points on the line; location of all low points on covered segments such as sags, drips, inclines, valves, manifolds, dead-legs, & traps; the elevation profile of the pipeline in sufficient detail that angles of inclination can be calculated for all pipe segments; & the diameter of the pipeline, & the range of expected gas velocities in the pipeline; (iii) Operating experience data that would indicate historic upsets in gas conditions, locations where these upsets have occurred, & potential damage resulting from these upset conditions; & (iv) Information on covered segments where cleaning pigs may not have been used or where cleaning pigs may deposit electrolytes. (2) ICDA region identification. An operator's plan must identify where all ICDA Regions are located in the transmission system, in which covered segments are located. An ICDA Region extends from the location where liquid may first enter the pipeline & encompasses the entire area along the pipeline where internal corrosion may occur & where further evaluation is needed. An ICDA Region may encompass one or more covered segments. In the identification process, an operator must use the model in GRI 02–0057, ''Internal Corrosion Direct Assessment of Gas Transmission Pipelines—Methodology,'' (incorporated by reference, see §192.7). An operator may use another model if the operator demonstrates it is equivalent to the one shown in GRI 02–0057. A
75			model must consider changes in pipe diameter, locations where gas enters a line (potential to introduce liquid) & locations down stream of gas draw-offs (where gas velocity is reduced) to define the critical pipe angle of inclination above which water film cannot be transported by the gas. (3) Identification of locations for excavation & direct examination. An operator's plan must identify the locations where internal corrosion is most likely in each ICDA region. In the location identification process, an operator must identify a minimum of two locations for excavation within each ICDA Region within a covered segment & must perform a direct examination for internal corrosion at each location, using ultrasonic thickness measurements, radiography, or other generally accepted measurement technique. One location must be the low point (e.g., sags, drips, valves, manifolds, deadlegs, traps) within the covered segment nearest to the beginning of the ICDA Region. The second location must be further downstream, within a covered segment, near the end of the ICDA Region. If corrosion exists at either location, the operator must— (i) Evaluate the severity of the defect (remaining strength) & remediate the defect in accordance with §192.933; (ii) As part of the operator's current integrity assessment either perform additional excavations in each covered segment within the ICDA region, or use an alternative assessment method allowed by this subpart to assess the line pipe in each covered segment within the ICDA region for internal corrosion; & (iii) Evaluate the potential for internal corrosion in all pipeline segments (both covered & non-covered) in the operator's pipeline system with similar characteristics to the ICDA region containing the covered segment in which VerDate Mar<15>2010 14:56 Jan 03, 2012 Jkt 223216 PO 00000 Frm 00500 Fmt 8010 Sfmt 8010 Y:\SGML\223216.XXX 223216 wreier-aviles on DSK3TPTVN1PROD with CFR 489 Pipeline & Hazardous Materials Safety Admin., DOT § 192.929 the corrosion was found, & as appropriate, remediate the conditions the operator finds in accordance with § 192.933. (4) Post-assessment evaluation & monitoring. An operator's plan must provide for evaluating the effectiveness of the ICDA process & continued monitoring of covered segments where internal corrosion has been identified. The evaluation & monitoring process includes— (i) Evaluating the effectiveness of ICDA as an assessment method for addressing internal corrosion & determining whether a covered segment should be reassessed at more frequent intervals than those specified in §192.939. An operator must carry out this evaluation within a year of conducting an ICDA; & (ii) Continually monitoring each covered segment where internal corrosion has been identified using techniques such as coupons, UT sensors or electronic probes, periodically drawing off liquids at low points & chemically analyzing the liquids for the presence of corrosion products. An operator must base the frequency of the monitoring & liquid analysis on results from all integrity assessments that have been conducted in accordance with the requirements of this subpart, & risk factors specific to the covered segment. If an operator finds any evidence of corrosion products in the covered segment, the operator must take prompt action in accordance with one of the two following required actions & remediate the conditions the operator finds in accordance with § 192.933. (A) Conduct excavations of covered segments at locations downstream from where the electrolyte might have entered the pipe; or (B) Assess the covered segment using another integrity assessment method allowed by this subpart. (5) Other requirements. The ICDA plan must also include— (i) Criteria an operator will apply in making key decisions (e.g., ICDA feasibility, definition of ICDA Regions, conditions requiring excavation) in implementing each stage of the ICDA process; (ii) Provisions for applying more restrictive criteria when conducting ICDA for the first time on a covered segment & that become less stringent as the operator gains experience; & (iii) Provisions that analysis be carried out on the entire pipeline in which covered segments are present, except that application of the remediation criteria of §192.933 may be limited to covered segments.
76	Part 192—Transportation of Natural and Other Gas	Subpart L, 192.605 (b)(2), pg 454	192.605 (b) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following, if applicable, to provide safety during maintenance and operations. .... (2) Controlling corrosion in accordance with the operations and maintenance requirements of subpart I of this part.
77	Part 192—Transportation of Natural and Other Gas	Subpart I, 192.453, pg 443	§ 192.453 General. The corrosion control procedures required by § 192.605(b)(2), including those for the design, installation, operation, and maintenance of cathodic protection systems, must be carried out by, or under the direction of, a person qualified in pipeline corrosion control methods.

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78	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart I, 192.491, pg 449	192.491 Corrosion control records. (a) Each operator shall maintain records or maps to show the location of cathodically protected piping, cathodic protection facilities, galvanic anodes, and neighboring structures bonded to the cathodic protection system. Records or maps showing a stated number of anodes, installed in a stated manner or spacing, need not show specific distances to each buried anode. (b) Each record or map required by paragraph (a) of this section must be retained for as long as the pipeline remains in service. (c) Each operator shall maintain a record of each test, survey, or inspection required by this subpart in sufficient detail to demonstrate the adequacy of corrosion control measures or that a corrosive condition does not exist. These records must be retained for at least 5 years, except that records related to §§ 192.465 (a) and (e) and 192.475(b) must be retained for as long as the pipeline remains in service.
79	Part 192—Transportation of Natural and Other	Subpart O, 192.947(g,h), pg 497	192.947 What records must an operator keep? An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At minimum, an operator must maintain the following records for review during an inspection. .... (g) Documents to carry out the requirements in §§ 192.923 through 192.929 for a direct assessment plan; (h) Documents to carry out the requirements in § 192.931 for confirmatory direct assessment;...
80	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.589, pg 603	195.589 What corrosion control information do I have to maintain? (a) You must maintain current records or maps to show the location of— (1) Cathodically protected pipelines; (2) Cathodic protection facilities, including galvanic anodes, installed after January 28, 2002; and (3) Neighboring structures bonded to cathodic protection systems. (b) Records or maps showing a stated number of anodes, installed in a stated manner or spacing, need not show specific distances to each buried anode. (c) You must maintain a record of each analysis, check, demonstration, examination, inspection, investigation, review, survey, and test required by this subpart in sufficient detail to demonstrate the adequacy of corrosion control measures or that corrosion requiring control measures does not exist. You must retain these records for at least 5 years, except that records related to §§ 195.569, 195.573(a) and (b), and 195.579(b)(3) and (c) must be retained for as long as the pipeline remains in service.
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82	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart I, 192.485, pg 448	192.485 Remedial measures: Transmission lines. (a) General corrosion. Each segment of transmission line with general corrosion and with a remaining wall thickness less than that required for the MAOP of the pipeline must be replaced or the operating pressure reduced commensurate with the strength of the pipe based on actual remaining wall thickness. However, corroded pipe may be repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe. Corrosion pitting so closely grouped as to affect the overall strength of the pipe is considered general corrosion for the purpose of this paragraph. (b) Localized corrosion pitting. Each segment of transmission line pipe with localized corrosion pitting to a degree where leakage might result must be replaced or repaired, or the operating pressure must be reduced commensurate with the strength of the pipe, based on the actual remaining wall thickness in the pits. (c) Under paragraphs (a) and (b) of this section, the strength of pipe based on actual remaining wall thickness may be determined by the procedure in ASME/ANSI B31G or the procedure in AGA Pipeline Research Committee Project PR 3–805 (with RSTRENG disk). Both procedures apply to corroded regions that do not penetrate the pipe wall, subject to the limitations prescribed in the procedures.

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83	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.585, pg 601	195.585 What must I do to correct corroded pipe? (a) General corrosion. If you find pipe so generally corroded that the remaining wall thickness is less than that required for the maximum operating pressure of the pipeline, you must replace the pipe. However, you need not replace the pipe if you— (1) Reduce the maximum operating pressure commensurate with the strength of the pipe needed for serviceability based on actual remaining wall thickness; or (2) Repair the pipe by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe. (b) Localized corrosion pitting. If you find pipe that has localized corrosion pitting to a degree that leakage might result, you must replace or repair the pipe, unless you reduce the maximum operating pressure commensurate with the strength of the pipe based on actual remaining wall thickness in the pits.
84	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal	Subpart I, 192.490, pg 449	192.490 Direct assessment. Each operator that uses direct assessment as defined in § 192.903 on an onshore transmission line made primarily of steel or iron to evaluate the effects of a threat in the first column must carry out the direct assessment according to the standard listed in the second column. These standards do not apply to methods associated with direct assessment, such as close interval surveys, voltage gradient surveys, or examination of exposed pipelines, when used separately from the direct assessment process. (NOTE : table is as follows: Column 1 = Threat / Column 2 = Standard. Row 1: External corrosion / 192.925. Row 2: Internal corrosion in pipelines that transport dry gas / 192.927. Row 3: Stress corrosion cracking / 192.929)
85	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.923, pg 486	192.923 How is direct assessment used and for what threats? (a) General. An operator may use direct assessment either as a primary assessment method or as a supplement to the other assessment methods allowed under this subpart. An operator may only use direct assessment as the primary assessment method to address the identified threats of external corrosion (ECDA), internal corrosion (ICDA), and stress corrosion cracking (SCCDA). (b) Primary method. An operator using direct assessment as a primary assessment method must have a plan that complies with the requirements in— (1) ASME/ANSI B31.8S (incorporated by reference, see § 192.7), section 6.4; NACE SP0502–2008 (incorporated by reference, see § 192.7); and § 192.925 if addressing external corrosion (ECDA). (2) ASME/ANSI B31.8S, section 6.4 and appendix B2, and § 192.927 if addressing internal corrosion (ICDA). (3) ASME/ANSI B31.8S, appendix A3, and § 192.929 if addressing stress corrosion cracking (SCCDA). (c) Supplemental method. An operator using direct assessment as a supplemental assessment method for any applicable threat must have a plan that follows the requirements for confirmatory direct assessment in § 192.931.
86	Part 195—Transportation of Hazardous Liquids by Pipeline	Subpart G, Section 195.587, pg 601	195.587 What methods are available to determine the strength of corroded pipe? Under § 195.585, you may use the procedure in ASME B31G, ''Manual for Determining the Remaining Strength of Corroded Pipelines,'' or the procedure developed by AGA/Battelle, ''A Modified Criterion for Evaluating the Remaining Strength of Corroded Pipe (with RSTRENG disk),'' to determine the strength of corroded pipe based on actual remaining wall thickness. These procedures apply to corroded regions that do not penetrate the pipe wall, subject to the limitations set out in the respective procedures.

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87	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.931, pg 490	§ 192.931 How may Confirmatory Direct Assessment (CDA) be used? An operator using the confirmatory direct assessment (CDA) method as allowed in § 192.937 must have a plan that meets the requirements of this section and of §§ 192.925 (ECDA) and § 192.927 (ICDA). (a) Threats. An operator may only use CDA on a covered segment to identify damage resulting from external corrosion or internal corrosion. (b) External corrosion plan. An operator's CDA plan for identifying external corrosion must comply with § 192.925 with the following exceptions. (1) The procedures for indirect examination may allow use of only one indirect examination tool suitable for the application. (2) The procedures for direct examination and remediation must provide that— (i) All immediate action indications must be excavated for each ECDA region; and (ii) At least one high risk indication that meets the criteria of scheduled action must be excavated in each ECDA region. (c) Internal corrosion plan. An operator's CDA plan for identifying internal corrosion must comply with § 192.927 except that the plan's procedures for identifying locations for excavation may require excavation of only one high risk location in each ICDA region. (d) Defects requiring near-term remediation. If an assessment carried out under paragraph (b) or (c) of this section reveals any defect requiring remediation prior to the next scheduled assessment, the operator must schedule the next assessment in accordance with NACE SP0502–2008 (incorporated by reference, see § 192.7), section 6.2 and 6.3. If the defect requires immediate remediation, then the operator must reduce pressure consistent with § 192.933 until the operator has completed reassessment using one of the assessment techniques allowed in § 192.937.
88	Part 192—Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards	Subpart O, 192.941, pg 495	192.941 What is a low stress reassessment? (a) General. An operator of a transmission line that operates below 30% SMYS may use the following method to reassess a covered segment in accordance with § 192.939. This method of reassessment addresses the threats of external and internal corrosion. The operator must have conducted a baseline assessment of the covered segment in accordance with the requirements of §§ 192.919 and 192.921. (b) External corrosion. An operator must take one of the following actions to address external corrosion on the low stress covered segment. (1) Cathodically protected pipe. To address the threat of external corrosion on cathodically protected pipe in a covered segment, an operator must perform an electrical survey (i.e. indirect examination tool/method) at least every 7 years on the covered segment. An operator must use the results of each survey as part of an overall evaluation of the cathodic protection and corrosion threat for the covered segment. This evaluation must consider, at minimum, the leak repair and inspection records, corrosion monitoring records, exposed pipe inspection records, and the pipeline environment. (2) Unprotected pipe or cathodically protected pipe where electrical surveys are impractical. If an electrical survey is impractical on the covered segment an operator must— required by § 192.706 at 4-month intervals; and (ii) Every 18 months, identify and remediate areas of active corrosion by evaluating leak repair and inspection records, corrosion monitoring records, exposed pipe inspection records, and the pipeline environment. (c) Internal corrosion. To address the threat of internal corrosion on a covered segment, an operator must— (1) Conduct a gas analysis for corrosive agents at least once each calendar year; (2) Conduct periodic testing of fluids removed from the segment. At least once each calendar year test the fluids removed from each storage field that may affect a covered segment; and (3) At least every seven (7) years, integrate data from the analysis and testing required by paragraphs (c)(1)– (c)(2) with applicable internal corrosion leak records, incident reports, safety-related condition reports, repair records, patrol records, exposed pipe reports, and test records, and define and implement appropriate remediation actions.
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5	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 005, pg 2	18 AAC 75.005. Responsibility. The owner or operator of a .... pipeline.... subject to the requirements of AS 46.04.030 or AS 46.04.055(j) is responsible for meeting the applicable requirements of this chapter and for preventing the discharge of oil into waters or onto land of the state.
6	Title 46. Water, Air, Energy, and Environmental Conservation	Sec tion 46.04.030 (b), pg 53	(b) A person may not cause or permit the operation of a pipeline or an exploration or production facility in the state unless an oil discharge prevention and contingency plan for the pipeline or facility has been approved by the department and the person is in compliance with the plan.
7		Article 4, Section 400, pg 110	18 AAC 75.400. Applicability. (a) A person who is subject to AS 46.04.030 or AS 46.04.055(j) must file an application for approval of an oil discharge prevention and contingency plan as required under 18 AAC 75.400 - 18 AAC 75.420 and meet the applicable requirements of 18 AAC 75.425 - 18 AAC 75.495. A person who is subject to AS 46.04.055(f) must file an application for approval of a nontank vessel plan as required under 18 AAC 75.400 – 18 AAC 75.420 and meet the applicable requirements of 18 AAC 75.426 – 18 AAC 75.496. The application must be made .... (4) for a pipeline, by the lease holder or the operator;
8		Article 4, Section 405, pg 111	18 AAC 75.405. Pre-application notification and consultation. (a) At least 60 days before submitting an application for approval of a new oil discharge prevention and contingency plan or a nontank vessel equivalent plan under 18 AAC 75.410 or for renewal of approval under 18 AAC 75.420, the applicant must notify the department of its intent to submit an application. The department will determine the number of copies of the plan that the applicant will be required to submit to the department. (b) The applicant may consult with the department to ensure that the application meets the requirements of 18 AAC 75.410 and to discuss the contents of the proposed plan. ...
9	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 410, pg 111	18 AAC 75.410. Application procedures. (a) An application for approval of an oil discharge prevention and contingency plan or a nontank vessel equivalent plan must include a completed application for approval, on a form supplied by the department and the number of copies of the plan determined under 18 AAC 75.405(a). The department may require the submission of additional copies of the plan and will notify the applicant of the need for additional copies within 10 days after the plan is submitted. In addition, the applicant must provide copies of the plan, upon request, to resource agencies, regional citizens' advisory councils, and other persons as directed by the department under 18 AAC 75.455. .... (c) The department will review an application submitted under (a) of this section using the procedures set out at 18 AAC 75.455 and will issue its decision under 18 AAC 75.460(a).

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10	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 415, pg 113	18 AAC 75.415. Application for amendment. (a) Subject to (b) of this section, before a change to a plan that has been approved under 18 AAC 75.400 - 18 AAC 75.496 may take effect, the plan holder must obtain approval from the department for an amendment to the plan. An application for approval of an amendment must be submitted on a form supplied by the department. For plans approved under 18 AAC 75.460(a), the application must be accompanied by the number of amended plans or plan amendments determined under 18 AAC 75.405(a). The department will use the procedures set out at 18 AAC 75.455 to review a plan amendment, unless the plan amendment is a routine plan update under (b) of this section, adds a vessel under (c) of this section, or otherwise does not diminish the plan holder's ability to respond to an oil discharge. (b) A routine plan update must be submitted to the department and, for plans approved under 18 AAC 74.460(a), to the applicable resource agencies within five days after the date the proposed change occurs. Routine plan updates include ... (2) a revision to the list of names, addresses, or telephone numbers of spill command and response personnel; and (3) a revision to a training procedure or course work requirement that does not reduce the amount or quality of training required by this chapter. ... (f) For plans approved under 18 AAC 75.460(a), if the department determines that a proposed plan amendment submitted under (b) of this section will diminish the plan holder's ability to respond to an oil discharge, the department will notify the plan holder within 10 days after receipt of the amendment that the amendment will be reviewed under 18 AAC 75.455. If the department determines that a proposed plan amendment will not diminish the plan holder's ability to respond to an oil discharge, the department will review the plan amendment and issue a written decision within 30 days after receipt of the proposed plan amendment. (g) For a plan approved under 18 AAC 75.460(a), the plan holder shall notify and, upon request, send a copy of any proposed plan amendment or update submitted under this section to resource agencies, regional citizens' advisory councils, and other persons as directed by the department under 18 AAC 75.455.
11		Article 4, Section 420, pg 114	18 AAC 75.420. Application for renewal. (a) A plan holder must apply for renewal of the department's plan approval, using a form supplied by the department, sufficiently in advance of expiration of the plan to permit department review before the plan approval expires.
12	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 447, pg 156	18 AAC 75.447. Department examination of new technologies. (a) To assure that proven new technologies are considered for use in oil discharge prevention and contingency plans, the department will review and appraise technology applied at other locations in the United States and the world that represent alternatives to the technologies used by plan holders in their oil discharge prevention and contingency plans submitted to meet response planning standards in 18 AAC 75.430 - 18 AAC 75.442 and the performance standards of 18 AAC 75.005 - 18 AAC 75.080. The department will conduct this review and appraisal by (1) sponsoring a technology conference at least every five years and in cooperation with persons, organizations, and groups with interests and expertise in relevant technologies; this conference will provide interested parties with an opportunity to describe the status of existing technologies in use as well as technologies that may be considered superior to those in use at that time; and (2) engaging in studies, inquiries, surveys, or analyses the department believes appropriate to the consideration of new technologies. (b) After its review and appraisal under (a) of this section, the department will issue written findings identifying new technologies that the department considers represent proven technological breakthroughs in oil discharge containment, control, or cleanup equipment. ...
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27		Article 4, Section 445, pg 146	18 AAC 75.445. Approval criteria for oil discharge prevention and contingency plans. (a) The department will use the criteria set out in this section to review an oil discharge prevention and contingency plan submitted under 18 AAC 75.425. … (NOTE- Details of criteria not inlcuded)
28		Article 4, Section 455, pg 157	18 AAC 75.455. Department review procedures for oil discharge prevention and contingency plans and nontank vessel equivalent plans. ... (b) When the department determines that an application and plan are sufficient for public review, the department will (1) send a notice setting a 30-day comment period to the Department of Natural Resources, the Department of Fish and Game, regional citizens advisory councils, and other persons who have made a written request for information regarding submissions subject to review under this section; ... (i) Following the comment deadline established under (b)(1) of this section, including any extension under (d)(2) of this section, and within 65 days after the department determines that an application and plan are complete, the department will approve, approve with conditions, or disapprove a plan. ...
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30	and Other Hazardous Substance	Article 4, Section 425 (a), pg 115	18 AAC 75.425. Oil discharge prevention and contingency plan contents. (a) An oil discharge prevention and contingency plan submitted for approval under 18 AAC 75.400 - 18 AAC 75.495 must be in a form that is usable as a working plan for oil discharge prevention, control, containment, cleanup, and disposal. A plan must contain enough information, analyses, supporting data, and documentation to demonstrate the plan holder's ability to meet the requirements of AS 46.04.030 and 18 AAC 75.400 - 18 AAC 75.495.

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31	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 425 (e) (1),(5), pg 116	(e) The information in the plan must include (1) Part 1 - Response Action Plan: The response action plan must provide in sufficient detail to clearly guide responders in an emergency event, all information necessary to guide response to a discharge of any size, up to and including a discharge that is equal to the applicable response planning standard set out at 18 AAC 75.430 - 18 AAC 75.442; the response action plan must include the following information: (A) Emergency action checklist - ..... (B) Reporting and notification - ..... (C) Safety - .....(D) Communications - ..... (E) Deployment strategies - ..... (F) Response scenario - ..... (G) nonmechanical response options - .... (5) Part 5 – Response Planning Standard: A calculation of the applicable response planning standards set out in 18 AAC 75.430 - 18 AAC 75.440 and 18 AAC 75.442, including a detailed basis for the calculation of reductions, if any, to be applied to the response planning standards.
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39	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 425 (e) (2), pg 119	(2) Part 2 - Prevention Plan: The prevention plan must include a detailed description of all oil discharge prevention measures and policies .....and must include, ...(A) ....(i) oil discharge prevention training programs required by 18 AAC 75.020(a); (ii) substance abuse and medical monitoring programs required by 18 AAC 75.007(e); (iii) security and surveillance programs required by 18 AAC 75.007(f). .....(C) potential discharge analysis - an analysis of potential oil discharges, including size, frequency, cause, duration, and location, and a description of actions taken to prevent a potential discharge; (D) specific conditions - a description of (i) any conditions specific to the facility or operation that might increase the risk of a discharge, including physical or navigation hazards, traffic patterns, and other site-specific factors; and (ii) any measures that have been taken to reduce the risk of a discharge attributable to these conditions, including a summary of operating procedures designed to mitigate the risk of a discharge;
40	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 425 (e) (3), pg 121	(3) Part 3 - Supplemental Information: The supplemental information section must provide background and verification information, including (A) facility description and operational overview - a general description of the oil storage, transfer, exploration, or production activities of the operation, including ... (vii) for a production facility, a description of the flow and gathering lines and processing facilities; ... (B) Receiving environment - for a land-based facility or operation: ... (C) Command system - a description of the command system to be used in response to a discharge, ... (D) Realistic maximum response operating limitations - ... (E) Logistical support - .... (F) Response equipment - .... (G) Nonmechanical response information - ... (H) oil spill primary response action contractor information - ... (I) training a detailed description of the training programs for discharge response personnel; (J) protection of environmentally sensitive areas and areas of public concern -
41	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 020, pg 3	18 AAC 75.020. Oil discharge prevention training & recordkeeping. (a) The owner or operator shall have in place personnel training programs designed to ensure that all personnel with job duties directly involving inspection, maintenance, or operation of oil storage and transfer equipment regulated under 18 AAC 75.005 - 18 AAC 75.085 are appropriately and regularly trained regarding company and state oil pollution prevention measures that are applicable to each position's duties. (b) Personnel training programs must include: (1) a listing of each position with job duties listed under (a) of this section and the training and level of knowledge appropriate to that position; (2) a listing of any licenses, certifications, or other prerequisites needed to hold each position listed in (1) of this subsection; and (3) a listing of training objectives and the means of achieving them, including training subjects, training schedules, frequency, and type. (c) Completion of training required by this subsection shall be verified by (1) a statement, signed and dated by each participant, listing the course or program content; (2) shipBoard records verified by the vessel master; or (3) computerized records verified by the owner or operator. (d) The owner or operator shall maintain for the life of the facility or operation, a history of all known oil discharges over 55 gallons within the state, including the source, cause, amount, and corrective action taken. Copies of records shall be provided to the department upon request. (e) The owner or operator shall prepare and maintain records in retrievable form to document training, inspections, tests, maintenance, and repairs required by 18 AAC 75.005 - 18 AAC 75.085. Unless specified otherwise, records must be kept for at least five years and copies shall be provided to the department upon request.

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50	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 047 (d), pg 9	(d) No later than December 30, 2007, the operator shall (1) completely contain the entire circumference of the flow line and provide the interstitial space with a leak detection system approved by the department; or (2) have in place a preventative maintenance program .....(*NOTE: (d)(2) full part included in maintenance section)*

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51	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 080 (d), pg 23	(d) The owner or operator shall ensure that buried metallic facility oil piping placed in service between May 14, 1992 and December 30, 2008, is protected from corrosion by installing protective coating and cathodic protection appropriate for local soil conditions and is of all welded construction with no clamped, threaded, or similar connections for lines larger than a one inch nominal pipe size.
52	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 080 (f), pg 24	(f) The owner or operator shall ensure that, after December 30, 2008, cathodic protection systems installed on facility oil piping are (1) consistent with NACE International's, Standard Recommended Practice- Control of External Corrosion on Underground or Submerged Metallic Piping Systems, 2002 edition (NACE RP0169-2002), adopted by reference; (2) designed by a corrosion expert; and (3) installed under the supervision of a corrosion expert;
53	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 080 (k)(3), pg 25	(k) Unless the owner or operator must comply with a more stringent requirement set out in this section, the operation and maintenance of a cathodic protection system on facility oil piping must ... (3) include maintenance of test lead wires in a condition that enables electrical measurements to be taken to determine the effectiveness of a cathodic protection system;
54	Other Hazardous Substance Pollution Control	Article 1, Section 080 (h), pg 24	(h) An owner or operator or a buried facility oil piping installation of metallic construction without cathodic protection shall ensure that the piping (1) is electrically inspected by a corrosion expert for active corrosion at least once every three years, but with intervals between inspections not exceeding 39 months; and (2) in areas in which active corrosion is found, cathodically protected in accordance with (d) or (f) of this section, as appropriate;
55	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 4, Section 425 (e) (4), pg 125	(4) Part 4 -- Best Available Technology Review: Unless application of a state requirement would be preempted by federal law, the plan must provide for the use of best available technology consistent with the applicable criteria in 18 AAC 75.445(k). In addition, the plan must (A) identify technologies applicable to the applicant's operation that are not subject to response planning or performance standards specified in 18 AAC 75.445(k)(1) and (2); these technologies include, at a minimum, ... (ii) for a terminal, a crude oil transmission pipeline, or an exploration and production contingency plan: cathodic protection or another approved corrosion control system if required by 18 AAC 75.065(h)(2), (i)(3), or (j)(3); a leak detection system for each tank if required by 18 AAC 75.065(i)(4) or (j)(4); any other prevention or control system approved by the department under 18 AAC 75.065(h)(1)(D); ....; maintenance practices for buried metallic piping containing oil as required by 18 AAC 75.080(b); protective coating and cathodic protection if required by 18 AAC 75.080(d) (k)(1),(l) or (m); and corrosion surveys required by 18 AAC 75.080(k)(2); ..... SPLIT

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56	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 080 (k)(1), pg 25	(k) Unless the owner or operator must comply with a more stringent requirement set out in this section, the operation and maintenance of a cathodic protection system on facility oil piping must (1) be consistent with Section 10 of Standard Recommended Practice: Control of External Corrosion on Underground or Submerged Metallic Piping Systems, (NACE RP0169- 2002), adopted by reference in (f) of this section; (2) include a cathodic protection survey by a corrosion expert or qualified cathodic protection tester; ....
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76	Other Hazardous Substance Pollution Control	Article 1, Section 080 (b), pg 23	(b) The owner or operator shall maintain metallic facility oil piping containing oil in accordance with a corrosion control program.
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78	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 047 (h), pg 10	(h) The owner or operator shall verify compliance with the requirements of (c) ... of this section by documentation, including (1) for corrosion control measures under (c) of this section, documentation to validate the effectiveness of those measures, including (A) dates and locations of inspections and tests; (B) inspections and test data evaluation including analysis of (i) weight loss coupons and electrical resistance probes; and (ii) corrosion inspections; (C) data and analysis of chemical optimization activities; (D) analysis of corrosion trends that affect the fitness for service of the flow line; and (E) a list and description of repair activities undertaken;
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82	18 AAC 75 Oil and Other Hazardous Substance Pollution Control	Article 1, Section 047 (c), pg 8	18 AAC 75.047. Requirements for flow lines at production facilities. … (c) No later than December 30, 2007, the owner or operator shall ensure that measures for controlling corrosion in flow lines are undertaken, including, at a minimum, (1) a corrosion monitoring and control program consistent with Chapter VIII of Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids (ASME B31.4-2002) adopted by reference in (b)(1) of this section; (2) unless a more stringent requirement is set out in this section, external corrosion control of buried or submerged flow lines consistent with NACE International's Standard Recommended Practice-Control of External Corrosion on Underground or Submerged Metallic Piping Systems, 2002 edition (NACE, RP0169-2002), adopted by reference; (3) external corrosion control of aboveground flow lines by the application of a protective coating, by the use of corrosion-resistant alloys or by another method approved by the department, unless the operator demonstrates by test, investigation, or experience appropriate to the environment of the flow line segment, that the anticipated extent of corrosion will not affect the flow line's fitness for service; and (4) a program designed to minimize internal corrosion, including, as appropriate, one or more of the following: (A) removal of foreign material by scraping or pigging; (B) treatment of residual water or dehydration; (C) injection of inhibitors, biocides, or other chemical agents; (D) removal of dissolved gases by chemical or mechanical means; (E) gas blanketing; (F) continuous internal coating or lining; or (G) another method approved by the department; and

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83	The Pipelines Regulations	Section 17(3)(b), Pg 8	Pressure testing 17 ... (3) Where the minister has reason to doubt the integrity of a pipeline or portions of a pipeline, he or she may request at any time during the operation of the pipeline: .... (b) special electronic surveys on the pipeline or any portion of the pipeline. (4) Where the minister makes a request pursuant to subsection (3), the operator shall comply with the request within the period specified by the minister. ...
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5	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.2.1(a), pg 15	2.2 PIPELINE MANAGEMENT SYSTEM ELEMENTS 2.2.1 General The structure of the pipeline management system is flexible; however, as a minimum, it shall address the criteria specified in Clauses 2.2.2 to 2.2 .6. .....2.2.2 Management 2.2.2.1 Policy and commitment The Licensee shall define its policy towards the various aspects of operating the pipeline. Policies shall address at least- (a) pipeline integrity management; .....
6	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.4(c), pg 18	2.2.4 Implementation The Licensee shall implement the plans and procedures of the pipeline management system covering at least the following : .....(c) Pipeline integrity management (Section 5) incorporating- (i) pipeline structural integrity (Section 6); (ii) external interference management (Section 7); (iii) anomaly assessment and defect repair (Section 9); and. (iv) change of operating conditions and remaining life review (Section 1 0). ....
7	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 5.2, pg 34	5.2 PIPELINE INTEGRITY MANAGEMENT PROCESS ....A PIMP shall cover the following: (a) Pipeline structural integrity, including the technical aspects of maintaining pipelines as detailed in Section 6. (b) Anomaly assessment and defect repair, as detailed in Section 9. (c) External interference threats to the pipeline, as detailed in Section 7. (d) Operating condition changes and remaining life review, as detailed in Section 10. (e) Stations operations and maintenance, as detailed in Section 8. Pipeline integrity management shall be carried out by competent personnel so that the responsibilities for approvals can be adequately implemented and demonstrated as sufficient for independent review. The diagram shown in Figure 5.1 describes the pipeline integrity management process, which incorporates the safety management study and an ongoing process of monitoring and review. This process is designed to ensure adequate integrity information is available when making the assessments required in Sections 6, 7, 8, 9 and 10.
8	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.2, pg 36	6.2 STRUCTURAL INTEGRITY MANAGEMENT OVERVIEW To maintain the structural integrity of the pipeline, the Licensee shall review both time-dependent and time-independent factors that have a bearing on the pipeline, including the following: (a) Pipeline operation and control. (b) Corrosion protection systems, including- (i) protective coatings systems; (ii) cathodic protection systems; and (iii) inhibition/internal corrosion control. (c) Pipe wall integrity, including- (i) anomaly assessment and defect repair (Section 9); and (ii) joints. (d) Station integrity (see Section 8). The measures to address structural integrity shall be described in the PIMP (see Section 5). NOTE: The data and information identified and collected during these activities, assessments and reviews should form the basis for ongoing assessment of the risk and integrity of the pipeline. The findings of such a program will determine what responses are necessary to ensure continuous safe and reliable operation of the pipeline. Structural integrity activity records shall be identified, collected and retained to enable new and emerging threats to be identified and managed through the safety management study's process and to determine effectiveness of controls (see Section 12).
9	Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.2, pg 43	7.2 EXTERNAL INTERFERENCE The safety management study, carried out in accordance with the requirements of AS 2885.1, requires that the Licensee identify and assess the risks associated with threats to the pipeline and instigate appropriate measures to manage those threats. The Licensee shall establish and implement procedures to monitor the effectiveness of the threat mitigation controls, and to identify any new external interference threats and document any such threat in the PIMP

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10	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 7.5.9, pg 49	7.5.9 Licensee's activities In addition to the external interference controls identified in the safety management study the controls associated with the following Licensee's activities, shall be included in the PIMP: (a) Coating assessment and repairs. (b) Pipe wall assessment and repairs. (c) Joint assessment and repair. (d) Loss of cover repair. (e) Incident response, review and prevention. (f) In-service modifications.
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22	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.5.4, pg 19	2.2.5.4 System audits The Licensee shall establish procedures for planning and implementing audits of the pipeline management system to determine compliance with and effectiveness of the plans and procedures. System audits should also assess compliance with legal and regulatory requirements and ensure the pipeline management system adequately addresses these issues. The Licensee shall consider the threats identified and risks evaluated in the safety management study to ensure that audits evaluate- (a) the effectiveness of the pipeline management system in controlling the risks identified; and (b) the effectiveness of the monitoring procedures in place to identify new or changed threats and risks.Audits shall be performed by competent personnel who are independent of the section of the pipeline management system being audited. The audit procedures shall cover the timing of audits, including the conduct of external independent audits where chosen to be undertaken or where required by regulatory authorities . Audit procedures shall cover arrangements for verifying the implementation and effectiveness of corrective and preventive actions designed to address any non-conformances identified during the audit.

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23	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 5.3, pg 35	5.3 REVIEW OF PIPELINE INTEGRITY MANAGEMENT PLAN (PIMP) AS 2885.3-2012 The PIMP of each pipeline shall be reviewed at approved intervals not exceeding 5 years …. Investigations and calculations shall be reviewed to confirm that- (i) the PIMP is consistent with the current structural condition of and the failure mechanisms identified in the pipeline; and (ii) any existing basis used to determine the remaining life calculated in accordance with Section 10 is valid.
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33	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.4(b), pg 18	2.2.4 Implementation The Licensee shall implement the plans and procedures of the pipeline management system covering at least the following : .....(b) Site safety and environmental management (Section 4)….
34	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.2.1(c), pg 15	2.2 PIPELINE MANAGEMENT SYSTEM ELEMENTS 2.2.1 General The structure of the pipeline management system is flexible; however, as a minimum, it shall address the criteria specified in Clauses 2.2.2 to 2.2 .6. .....2.2.2 Management 2.2.2.1 Policy and commitment The Licensee shall define its policy towards the various aspects of operating the pipeline. Policies shall address at least- ...(c) occupational health and safety management. ...
35	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.2.1(b), pg 15	2.2 PIPELINE MANAGEMENT SYSTEM ELEMENTS 2.2.1 General The structure of the pipeline management system is flexible; however, as a minimum, it shall address the criteria specified in Clauses 2.2.2 to 2.2 .6. .....2.2.2 Management 2.2.2.1 Policy and commitment The Licensee shall define its policy towards the various aspects of operating the pipeline. Policies shall address at least-... (b) environmental management; ....
36	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 4.2, pg 24	4.7.1 General. Environmental planning is necessary to ensure that all field practices and procedures minimize impact on the environment. The Licensee shall consider environmental aspects of its pipeline operations and associated facilities and document them in an environmental management plan (EMP). Any threats to the environment shall be assessed and appropriate controls implemented as part of the pipeline management system.

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37	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 10.2.6, pg 78	10.2.6 Review of safety management study As part of any remaining life review for change of use or extension of remaining life and at a period not exceeding 5 years (or lesser period if required by changes to the operating environment or condition of the pipeline), an identification shall be made of the threats that could result in hazardous events affecting the pipeline. In such an instance, threat mitigation procedures, failure analysis and risk evaluation shall be reviewed. As the safety management study is an active document, systems and processes shall be in place to identify new or changed threats and implement methods for their mitigation in accordance with the requirements of AS 2885 .1. Any changes arising from the review of the safety management study shall be included in an update of the pipeline management system.
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39	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance		
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41	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.2.4, pg 16	2.2.2.4 Training and competency Personnel shall be competent to perform the specific tasks and functions for which they are responsible. The Licensee shall establish and maintain procedures for identifying and providing the training needs of all personnel performing functions covered by the pipeline management system. As a minimum and as applicable to each position, personnel responsible for the operation and maintenance of the pipeline shall be- (a) adequately trained and experienced in all aspects of the equipment in their control; (b) adequately trained in the obligations of the pipeline management system and briefed in the requirements of the controls and actions identified during the safety management study; (c) aware of properties of the fluid, including its hazards (seeN ote 1); and (d) adequately knowledgeable in the design, construction, welding, hydrostatic testing, cathodic protection and coating of pipelines as required by AS 2885, the relevant pipeline coating and cathodic protection standard and other technical documents and Standards relevant to the pipeline's integrity (see Note 2 and Note 3).

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42	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.2.2, pg 15	2.2 PIPELINE MANAGEMENT SYSTEM ELEMENTS 2.2.1 General The structure of the pipeline management system is flexible; however, as a minimum, it shall address the criteria specified in Clauses 2.2.2 to 2.2 .6. .....2.2.2 Management ... 2.2.2.2 Management structure A defined management structure for the pipeline shall be established to identify key positions and or personnel. A management structure appropriate to the size and complexity of the pipeline shall be maintained.
43	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.2.3, pg 16	2.2.2.3 Responsibilities, accountabilities and authorities The responsibilities, accountabilities and authority levels of personnel and or contractors with respect to the various aspects of the operation and maintenance of the pipeline shall be detailed in the pipeline management system. In particular, personnel shall be identified and documented with the responsibility and authority to- (a) initiate action to prevent a loss of pipeline integrity, damage to the environment, impact to public, or to correct an occupational health and safety issue; (b) identify and report on any existing or potential deficiencies within the pipeline management system or the pipeline's operation and maintenance; (c) initiate, recommend and approve corrective and preventive actions in relation to identified existing or potential deficiencies within the pipeline management system or the pipeline's operation and maintenance; (d) evaluate and verify the effectiveness of any corrective or preventive action implemented; and (e) satisfy the mandatory approval requirements of this Standard. NOTE: AS 2885 .0 requires the development of an approval matrix to document the delegations of the Licensee.
44	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 2.2.2.5, pg 17	2.2.2.5 Resourcing The Licensee shall identify the resourcing, equipment and material requirements for the pipeline' s operation and maintenance, including the resources required to ensure the appropriate development, implementation and review of the pipeline management system. NOTE: Where the pipeline is in continuous operation, sufficient personnel should be available for undertaking planned and unplanned operations and maintenance, taking into account the requirements for leave and training.
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50	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.4.1 6.4.2, pg 37	6.4 PIPELINE CORROSION PROTECTION 6.4.1……..The processes and procedures shall ensure that the coating system and cathodic protection system are maintained and perform the required function of protecting the pipeline from threats, such as corrosion and physical damage, to ensure the pipeline remains fit for purpose during the operating life. 6.4.2 ..... The corrosion mitigation strategy shall cover maintaining coating condition, cathodic protection levels and inspection surveys .

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51	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.4.3.3, pg 38	6.4.3.3 Below-ground pipework The assessment of the coating condition of below-ground pipework shall be achieved by evaluation of some or all of the following : (a) Cathodic protection data. (b) Coating defect surveys (e.g. Pearson or DC-pulsed method surveys). NOTE: For information on coating defect surveys, see AS 4827 .1. (c) Visual inspection at selected locations in bell-hole excavations and where the pipeline is exposed for any reason. The coating and/or the cathodic protection system shall be maintained to a standard such that- (i) the integrity of the pipe wall is maintained in accordance with the PIMP; 39 AS 2885.3-2012 (ii) the cathodic protection system effectively maintains protection at all coating defects in accordance with AS 2832.1; and (iii) coating disbandment is minimized. Records of coating condition inspections shall be kept.
52	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.4.3.4, pg 39	6.4.3.4 Coating maintenance strategy Where, after inspection, the pipe coating integrity is identified to be affected, the Licensee shall undertake an assessment to determine if remedial action is required. The corrective action may include coating repair or renewal. Where a repair is made to a pipeline coating, the material used for repair shall be compatible with the original coating and shall have been demonstrated by test, investigation or experience to be suitable for the method of installation, the service conditions and the environment. Procedures for application of the repair shall be developed so that the desired physical and chemical qualities are obtained. Thereafter, the application shall be in strict accordance with the procedures. Surface preparation, application and testing of the coating shall be subject to a quality control program.
53		Section 6.4.4, pg 39	6.4.4 Pipeline cathodic protection system Operation, maintenance and monitoring of cathodic protection systems shall be carried out in accordance with the requirements of AS 2832.1. ..... Where any inspection indicates that satisfactory protection is not fully achieved on the pipeline, timely and appropriate action shall be taken to restore full protection or to instigate other measures that monitor corrosion. The following specify personnel, instrument, test and record requirements: (i) Personnel, experience, qualification and required training The parties responsible for the monitoring, survey, inspection, testing and maintenance of the cathodic protection system shall be competent in cathodic protection as approved by the delegate ofthe Licensee. (ii) Instrument and equipment Only approved measuring equipment and techniques in accordance with the requirements of AS 2832.1 shall be used. (iii) Interference testing Interference testing shall be conducted in accordance with AS 2832.1. (iv) Records Records complying with the requirements of AS 2832.1 shall be retained for the life of the pipeline.
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55	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance		

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68	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.4.2.2,9.4.2.5, pg 59	9.4.2.2 Interaction of corrosion anomalies Adjacent corrosion anomalies may interact to produce a failure pressure that is lower than the individual failure pressures of the isolated anomalies treated as single anomalies. If two or more anomalies are close to one another, they can be combined into a single equivalent anomaly for the purpose of analysis. If the separation distance is sufficient to avoid interaction, then the anomalies may be analysed separately. Combined pipe wall anomalies shall be subjected to detailed assessment. NOTE: Rules for combining interacting anomalies into a single equivalent anomaly are detailed in various documents and recommended practices including API RP 579, AGA PR3-805 (RSTRENG) and DNV RP FlOl. The Licensee shall ensure that due consideration is given for the interaction of anomalies in corrosion anomaly engineering assessments. Areas that have coincident internal and external corrosion anomalies shall be acceptable, regardless of the length of the corroded area, provided the sum of the maximum internal anomaly depth and the maximum external anomaly depth is 10% or less of the nominal wall thickness of the pipe. NOTE: Suggested corrosion anomaly interaction rules are given in Appendix C..... 9.4.2.5 Pipe body surface cracks Crack-like anomalies found on pipe body surface are considered defects unless fracture mechanics analysis, including fatigue cracking assessment (see Note), indicates that such anomalies are acceptable. NOTE: For information on fracture mechanics analysis, see Table 9.2. The engineering assessment shall include consideration of service history and loading, anticipated service conditions (including the effects of corrosive and chemical attack), the mechanism of crack formation, crack dimensions, crack growth mechanisms, failure modes, and material properties (including fracture toughness properties). Crack-like defects shall be removed, replaced or otherwise repaired. Crack-like defects may be removed by grinding provided appropriate, as per industry practice and repair plan (see Clause 9.10), measures are put in place and metal loss due to grinding complies with acceptable limits of anomaly assessment codes. The requirements for detailed non-destructive testing (NDT) for cracks shall be assessed by the Licensee. Wall thickness loss due to grinding may be assessed in the same manner as for corroded pipework. 9.4.2.6 Environmentally assisted cracking Stress corrosion cracking (SCC), hydrogen-induced cracking (HIC), sulfide stress corrosion cracking and hydrogen-assisted cold cracking (HACC) are environmentally assisted forms of cracking that shall be assessed as crack-like anomalies in accordance with Clause 9.4.2.5.
69	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 9.4.2.6, pg 59	9.4.2.6 Environmentally assisted cracking Stress corrosion cracking (SCC), hydrogen-induced cracking (HIC), sulfide stress corrosion cracking and hydrogen-assisted cold cracking (HACC) are environmentally assisted forms of cracking that shall be assessed as crack-like anomalies in accordance with Clause 9.4.2.5. NOTE: Environmental cracks typically occur in multiples and may be branched. The assessment procedures in Appendix C should be applied to such cracks provided a predominant crack, whose behaviour largely controls the structural response of the material, can be identified. The predominant crack in the presence of multiple or branched cracks may be defined through characterization rules that allow multiple crack geometry to be modelled to a simpler one in order to make the actual crack geometry more manageable to fracture mechanics analysis. These characterization rules account for anomalies of shape, orientation and interaction. The rules used to characterize crack-like anomalies are necessarily conservative and intended to lead to idealized crack geometries that are more severe than the actual crack geometry they represent. For further guidance on interaction rules in environmentally assisted cracking, see API RP 579 and Stress Corrosion Cracking (Dec 2007)- Canadian Energy Pipeline Association (CEPA). When a predominant crack cannot be defined even after re-characterization, more advanced assessment techniques, such as damage mechanics, may be used. Multiple crack-like anomalies do not have to be combined into an equivalent anomaly for evaluation if a stress intensity factor and limit load solution can be obtained for the interacting anomaly geometries.

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70	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.3.1(d), pg 37	6.3 PIPELINE OPERATION AND CONTROL 6.3.1 General Pipeline operation and control shall be continually monitored while the pipeline is in operation to ensure that pipeline structural integrity is maintained. The pipeline shall be operated in accordance with the following: ....(d) Ensure that operating conditions are assessed and mitigate the likelihood of stress corrosion cracking initiation or growth.
71	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.4.6, pg 40	6.4.6 Corrosion monitoring and remediation The internal/external surfaces of the pipeline shall be monitored for corrosion in accordance with the pipeline integrity management plan. Where corrosion is confirmed, it shall be assessed in accordance with Section 9. Where a pipe section is removed from the pipeline, the internal surface of the removed pipe section shall be inspected to assess the effectiveness of the internal corrosion control program. Whenever any part of a buried or submerged anti-corrosion-coated pipeline is exposed, it shall be inspected for corrosion and evidence of damage to, or deterioration of, any anti-corrosion coatings. If corrosion is found, it shall be evaluated to determine if the corrosion is systemic in the rest of the pipeline. A repair procedure shall be established and implemented to rectify the corroded pipe sections, where applicable. The corrosion mitigation measures in the PIMP shall be reviewed to determine if additional requirements and/or measures will be necessary for controlling the identified corrosion in the pipeline. This review shall consider the cause and rate of corrosion and recommend suitable actions, which may include a reduction of the design life.
72	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.4.1-6.4.2, pg 37	6.4 PIPELINE CORROSION PROTECTION 6.4.2 .... NOTE: The monitoring and control of the following items should be considered part of the internal corrosion mitigation strategy: (a) Pipeline pigging. (b) Trash and water sampling, to determine iron counts or bacteria populations. (c) Inhibitor rate monitoring and re sidual sampling. (d) Biocide rate monitoring and residual sampling. (e) Fluid (composition) change. (f) Internal corrosion coupon assessment. (g) Pipeline inlet quality monitoring-abnormal operation assessment- off-specification gas or liquids entry. (h) Internal corrosion defect assessment by NDT methods. (i) Internal liner condition assessment (where used). A pipeline provided with a corrosion allowance shall incorporate monitoring of the consumption ofthe allowance (see AS 2885 .1).
73	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.6.1, 6.6.2, pg 40	6.6.1 General As specified in the PIMP, periodic inspections shall be carried out to identify actual or potential factors that could affect the integrity of the pipeline. The Licensee shall consider the use of an inline inspection tool capable of detecting the flaws that may exist in the pipeline. Any decision not to use an inline inspection tool shall be consistent with the safety management study and PIMP, and shall be documented. Where a pipeline (or section of a pipeline) is not capable of being inspected by an inline tool, the Licensee shall consider whether the pipeline needs to be modified to permit inspection by an inline inspection tool. Any decision not to undertake modifications for this purpose shall be consistent with the safety management study and PIMP, and shall be documented. Where during inspection the integrity of the pipeline is threatened, the Licensee shall take immediate action, including actions required by Clause 9.3. 6.6.2 Frequency of inspection assessment The frequency of inspection and assessment shall be documented in the PIMP, based on past reliability of the pipeline, historical records, current knowledge of its condition, the rate of deterioration (both internal and external corrosion, and coating degradation), and statutory requirements...

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78	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 12.3(e,f,k), pg 88	12.3 OPERATION AND MAINTENANCE RECORDS The Licensee shall prepare a records management plan. The records management plan shall detail the records to be obtained, the records to be retained, storage methods and procedures to maintain currency of the records, until the abandonment of or removal of the pipeline. Records that shall be included in the plan are the following: ..... (e) Details of any corrosion, dents or other anomalies. (f) Details of the cathodic protection system as required to be recorded by AS 2832.1....(k) Details of any coating inspections and repairs. ...
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82	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.5, pg 40	6.5 PIPE WALL INTEGRITY .....To maintain pipe wall integrity, the Licensee shall ensure the following requirements are met: (a) Sufficient wall thickness shall be maintained at all locations, to contain fluid at the system MAOP. The minimum allowable wall thickness shall be assessed as follows: (i) For a new pipeline, and for an in-service pipeline containing no corrosion anomalies or uniform general wall thickness loss, the minimum wall thickness shall be calculated in accordance with AS 2885.1. (ii) For a pipeline with anomalies, the minimum wall thickness shall be assessed in accordance with Section 9. (b) Sufficient structural integrity shall be maintained at joints to prevent leakage at the MAOP. (c) Where the safety management study identifies environment-related cracking, HIC or corrosion fatigue, the pipelines shall be inspected for evidence of both longitudinal and circumferential cracks in accordance with the PIMP. (d) The pipeline shall be inspected for evidence of material and construction anomalies in accordance with the PIMP. (e) The results of inspections shall be analysed and the outcomes incorporated in the PIMP. (f) Corroded pipelines shall be inspected for the extent of internal and external corrosion in accordance with the PIMP and the rate of corrosion shall be determined.

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83	Australian Standard - Pipelines-Gas and liquid petroleum, Part 3: Operation and maintenance	Section 6.4.1-6.4.2, pg 37	6.4 PIPELINE CORROSION PROTECTION 6.4.1…… Adequate monitoring and maintenance shall be carried out to ensure that corrosion protection systems perform as required. The pipeline shall be operated with the required thickness for pressure containment. Metal loss from corrosion shall be investigated and mitigated by a documented corrosion monitoring strategy to maintain pipeline integrity. The Licensee shall have the processes and procedures defined in the PIMP..... 6.4.2 Corrosion mitigation strategy A corrosion mitigation strategy, consistent with the corrosion protection design and control equipment, shall be developed and implemented for the life of the pipeline. The external and internal corrosion mitigation strategy shall be developed based on the monitoring and control mechanisms identified in the safety management study and the pipeline design. The corrosion mitigation strategy shall include protection criteria, applicable principles, and procedures. .... The corrosion mitigation strategy shall be detailed in the PIMP. ...
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89	Pipelines-Gas and liquid petroleum, Part 3: Operation and	Section 6.4.5, pg 39	6.4.5 Other corrosion mitigation measures Where the design of the pipeline in accordance with AS 28 85.1 includes the use of inhibitors and biocides as the method of corrosion mitigation, the Licensee shall confirm that corrosion is adequately controlled and shall validate corrosion mitigation measures through the integrity management process. Where the mitigation method is found to be unsatisfactory, the method shall be revised to achieve the required level of corrosion control in accordance with AS 2885.1

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90	- Pipelines-Gas and liquid petroleum, Part 3: Operation	Section 7.5.4, pg 48	7.5.4 Vegetation on and near the pipeline ……. NOTE: Vegetation, whose roots may damage the anti-corrosion coating of the pipeline, should not be permitted in the vicinity of the pipeline.

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1	**AB**			
2	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**
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4	Alberta Pipeline Regulation	Page 29/ Section 43	When the description of land in a certificate of title issued to a person other than the Crown does not except, reserve or otherwise refer to land, owned by the Crown, that comprises at any time the bed or shore of a lake, river, stream or other body of water then, notwithstanding anything in the Public Lands Act, a person who has the right to construct or operate a pipeline under this Act has the right to do so on, across, over or under that bed or shore. Please see comment below.	
5		Page 29/ Section 41	41 No pipeline may be constructed on, across, over or under an irrigation canal or ditch under the Irrigation Districts Act or a drainage ditch under the Drainage Districts Act without the approval of the owner, or, if approval cannot reasonably be obtained from the owner, without the approval of the Board	The owner or if not reasonably attainable, the ERCB must approve pipeline crossings that include an irrigation canal or ditch.
6			Contingency plans for liquid test media 35(1) A licensee shall comply with the liquid test media requirements in Directive 077 if (a) the licensee intends to test a pipeline using a liquid test medium other than fresh water, and (b) one or more of the following matters will apply in respect of the test: (i) the volume of the test section will exceed 500 cubic metres; (ii) the hoop stress level during the test is expected to exceed 100% SMYS; (iii) the pipeline will cross or be within 100 metres of flowing water at the time of pressure testing.	
7	Directive 66			
8		16/ 35	Test medium / disposal- ERCB approval is required if the hoop stress level during the test exceeds 100 per cent SMYS, or the volume of the test section will exceed 3 m3 and the pipeline crosses or is within 100 m of flowing water and the hoop stress during the test will exceed 30 per cent SMYS (Pipeline Regulation, Sections 35).	ERCB approval is required for test medium disposal if the test section is within 100 m of flowing water and hoop stress exceeds 30% SMYS.
9	Directive 77	23/ 6.2	Requirements: For the requirements in this section, a "new welded steel pipeline" is defined as a steel pipeline that has circumferential joining done by welding, has not been in previous operation, and was constructed within the previous 12 months. 1) If any of the three criteria in Section 35(1) of the Pipeline Regulation apply, the licensee must complete the following: a) for a new welded steel pipeline, nondestructively inspect all welds in accordance with Clause 7.10.4 or 16.9.3 of CSA Z662-11, as applicable, for the entire pipeline portion within 100 m of flowing water and remove or repair all welds that are found unacceptable; b) prior to the start of pressure testing, ii) deploy the necessary equipment and resources to the test site, with focus on areas of flowing water, to ensure that full implementation of the contingency plan can be achieved without delay in the event of a spill or release of the test medium in preparation for, during, or following pressure testing;	
10	Directive 56	188/ step 6	Environmental Requirements Schedule 3.2. the application will comply with the code of practice in accordance with the water act. Yes means you will notify AENV as required by the water act.	

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11	Env. Protection and Enhancement Act	88/122(1)(d)	Lieutenant Governor in Council regulations 122(1) The Lieutenant Governor in Council may make regulations (d) regulating or prohibiting any use of land or any action in respect of land as a result of which any substance is released on or under any land, including land (i) adjacent to or underlying a watercourse, or (ii) adjacent to or overlying an aquifer;	
12	Code of Practice for Watercourse Crossings	21/11(2)	Where written specifications for a plan for a works associated with a watercourse crossing under section 6(1)(b), (a) were prepared by a professional engineer, the engineer must certify in writing that the written specifications included in the plan meet the standards specified in clauses (c) and (d) in Part 1 of Schedule 2, and the design drawings must include the stamp and signature of the professional engineer; (b) were prepared by an engineering technical specialist, the engineering technical specialist must certify in writing that the information and written specifications included in the plan meet the standards specified in clauses (c) and (d) of Part 1 of Schedule 2; (c) were prepared by an owner, the owner must confirm in writing that the information and written specifications included in the plan meet the standards specified in Part 1 of Schedule 2.	
13		14/8(1)	A new watercourse crossing must be constructed in accordance with the applicable parts of section 10 and Schedules 2 and 3, and the written specifications and recommendations of a qualified aquatic environment specialist	
14		26/ Schedule 2, Part 1 (a)	Upon completion of the works, the quantity and productive capacity of the aquatic environment, including fish habitat, at the watercourse crossing site, where technically feasible, and adjacent to the watercourse crossing site must be equivalent to or exceed that which existed prior to commencing the works;	
15	COP for Pipelines and Telecommunication Lines Crossing a Water Body	9/6(1)	At least 14 days before a works is carried out, an owner must prepare a plan for the works that (a) meets the design and construction standards specified in Part 1 of Schedule 2; and (b) contains or incorporates the following: (i) for a pipeline crossing, except for the removal of all or part of a pipeline crossing, the written information and specifications specified in Part 2 of Schedule 2 that have been prepared by a professional engineer, and that contain the certification and stamp and signature of the professional engineer as required under section 10(2);in addition to the requirements specified under clause (a) and (b)(i) and (ii), for a pipeline crossing or telecommunication line crossing, (A) the construction methods and conditions, including any written specifications and recommendations of a qualified aquatic environment specialist, to be used in carrying out the works as determined in accordance with section 8 and 9 and Schedule 3; (B) an outline of the contingency measures to be taken in the event of potential problems resulting from adverse conditions or crossing method failures, and that take into account any restricted activity periods; and	
16	Alberta Pipeline Regulation	8/(m.1)	"flowing water" means water within a creek, stream, river, lake or other body of water except where the water is completely frozen to the bed of the body of water;	flowing water = water within a creek, stream, river, lake or other body of water except where the water is completely frozen to the bed of the body of water.
17	Water Act	18/(ggg)	"water body" means any location where water flows or is present, whether or not the flow or the presence of water is continuous, intermittent or occurs only during a flood, and includes but is not limited to wetlands and aquifers but does not include except for clause (nn) and section 99 "water body" that is part of an irrigation works if the irrigation works is subject to a licence and the irrigation works is owned by the licensee, unless the regulations specify that the location is included in the definition of water body;	water body = any location where water flows or is present

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18	Env. Protection and Enhancement Act	24/(yyy)	"watercourse" means (i) the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh or other natural body of water, or (ii) a canal, ditch, reservoir or other artificial surface feature made by humans, whether it contains or conveys water continuously or intermittently;	watercourse = bed and shore of river, stream, lake, creek, lagoon, swamp, marsh or other natural body of water, or a canal, ditch, reservoir or other artificial surface feature made by humans, whether it contains or conveys water continuously or intermittently.
19	Alberta Pipeline Regulation	26/43	The licensee of a pipeline that crosses water or unstable ground shall at least once annually inspect the pipeline right of way to assess (a) the surface conditions on and adjacent to the right of way, (b) indications of any leak in the pipeline, (c) any construction activity performed by others, (d) any encroachment or development near the pipeline right of way (e) any other condition affecting the operation of the pipeline.	The right of way shall be annually inspected.
20	Directive 66	22/ 63. Right-of-way	Operating companies must patrol their pipelines in order to observe surface conditions on and adjacent to their rights-of-way, indications of leaks, construction activity performed by others, and other conditions affecting the safety and operation of the pipelines. Particular attention must be given to the following: i) water crossings	
21	Directive 77	26/ Form A6.1	4. For a new welded steel pipeline, were all welds nondestructively inspected in accordance with Clause 7.10.4 or 16.9.3, as applicable, of CSA Z662-11, for the entire pipeline portion within 100 m of flowing water and all welds found unacceptable removed or repaired? If NO, submit a request for deviation to pipelineoperations@ercb.ca, in accordance with Section 6.2, requirement 2.	
22		30/ user notes 3.3	For nonsour service pipelines, all butt welds within the limits of a water crossing or an uncased road or railway crossing and all pressure-containing welds not subject to a pressure test in place must be nondestructively inspected. (See CSA Z662, Clause 7.10.3: Mandatory Nondestructive Inspection.)	
23	Alberta Pipeline Regulation	35/68(1a)	Pipeline warning signs 68(1) A licensee shall install pipeline warning signs (a) at each side of the crossing where a pipeline crosses a highway, road, railway or watercourse,	
24		24/ (35,b,iii)	A licensee shall comply with the liquid test media requirements in Directive 077 if the pipeline will cross or be within 100 metres of flowing water at the time of pressure testing.	
25	Code of Practice for Watercourse Crossings	23/14	The owner must monitor a watercourse crossing in accordance with the plan prepared under section 6 to ensure that the requirements of this Code of Practice are met over the operational life span of the crossing.	

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26	COP for Pipelines and Telecommunicatio	10/6(b)(iii)c	in addition to any monitoring measures contained in the written specifications and recommendations of a professional engineer, owner or qualified aquatic environment specialist, (1) specification of the monitoring measures that will, during the anticipated life of the pipeline crossing or telecommunication line crossing, meet the requirements of this Code of Practice; and	
27		18/13(1)	The owner must monitor a pipeline crossing or telecommunication line crossing in accordance with the plan prepared under section 6 to ensure that the requirements of this Code of Practice are met over the operational life span of the crossing.	
28	Directive 66	13/17	Sectionalizing valves are installed on both sides of major water crossings and other locations appropriate for the terrain **(HVP and low vapour pressure [LVP] only)** (CSA Standard Z662, Clause 4.4.8).	Note this is a CSA Z662 requierment mentioned in D66 as minimum requierment.
29	Code of Practice for Watercourse Crossings	5.5	Information and written specifications that must be included in a plan under subsection (1)(b) (a) must be prepared by either a professional engineer or an engineering technical specialist, whichever is considered appropriate by the owner, except as specified in clause (b); (b) may be prepared by the owner only in those situations where (i) the watercourse crossing is to be removed, or (ii) where (A) the watercourse crossing is or will be located in an unmapped water body that enters any class of mapped water body, at a distance of greater than 2 kilometres upstream from the mouth of the unmapped water body, and (B) there is no documented evidence of fish presence in the unmapped water body.	
30			Where it has been determined by the designer that aerial crossings are preferable to submarine crossings, aerial crossings may be used. Overhead structures used to suspend pipelines shall be designed in accordance with sound engineering practices.	
31		14/8	A new watercourse crossing must be constructed in accordance with the applicable parts of section 10 and Schedules 2 and 3, and the written specifications and recommendations of a qualified aquatic environment specialist if required under subsections (5) and (6), and the type of new watercourse crossing that must be constructed is as follows: (see pg 14)	
32		27/ Schedule 2 part 1 (e)	Measures must be implemented to avoid, or if not possible, minimize impairment of water quality of the water body;	Measures must be implemented to avoid or minimize impairment of water body quality.

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33	COP for Pipelines and Telecommunication Lines Crossing a Water Body	9/6(1)	At least 14 days before a works is carried out, an owner must prepare a plan for the works (a) meets the design and construction standards specified in Part 1 of Schedule 2; and (b) contains or incorporates the following: (i) for a pipeline crossing, except for the removal of all or part of a pipeline crossing, the written information and specifications specified in Part 2 of Schedule 2 that have been prepared by a professional engineer, and that contain the certification andstamp and signature of the professional engineer as required under section 10(2); in addition to any monitoring measures contained in the written specifications and recommendations of a professional engineer, owner or qualified aquatic environment specialist, (1) specification of the monitoring measures that will, during the anticipated life of the pipeline crossing or telecommunication line crossing, meet the requirements of this Code of Practice	A work plan must be prepared by the owner 14 days before the works is carried out.
34	Directive 66	51/ 4 Failures on Pipelines with Major Potential Public and Environmental Consequences	Pipelines with major potential failure consequences include: any liquids pipeline crossing water or within 100 m of a water body, any liquids pipeline crossing parks or wetlands	D66 is not a requirement but a guide for regulator inspection and identification of hazards
35	Directive 66	38/ 68 c.	Control and containment (Pipeline Regulation 54) ii) Unaddressed spill into water, operator aware, no action is being taken. iii) Operator does not take steps to contain spill as soon as possible and prevent spill from spreading (e.g., berms, dykes, booms if on water). Results in HighRisk Enforcement	Control and containment - ii&iii result in high risk enforcement
36	Alberta Pipeline Act		Public Lands Act: 3(1) Subject to subsection (2) but notwithstanding any other law, the title to the beds and shores of (a) all permanent and naturally occurring bodies of water, and (b) all naturally occurring rivers, streams, watercourses and lakes, is vested in the Crown in right of Alberta and a grant or certificate of title made or issued before, on or after May 31, 1984 does not convey title to those beds or shores. For the purposes of subsection (1), a river, stream or watercourse does not cease to be naturally occurring by reason only that its water is diverted by human act.	

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1	**Topic**	**BC**			
2	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (Level 3)**
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4	Environmental Protection and Management Regulation	9/11	A person who carries out an oil and gas activity on an operating area must, for each crossing of a stream, wetland and lake, ensure all of the following: (a) the crossing is constructed and maintained at times and in a manner that is unlikely to harm fish or destroy, damage or harmfully alter fish habitat; (b) the crossing does not (i) prevent the movement of fish, nor (ii) impede the movement of fish to the extent that it is harmful to the survival of the fish; (c) the side of the stream, wetland or lake is protected at the crossing; (d) any disturbance to the stream channel and stream bank, wetland, or lake bottom, as applicable, is mitigated.	For an oil and gas operation crossing a stream, wetland or lake: (a) the crossing is constructed and maintained at times and in a manner that is unlikely to harm fish or destroy, damage or harmfully alter fish habitat; (b) the crossing does not (i) prevent the movement of fish, nor (ii) impede the movement of fish to the extent that it is harmful to the survival of the fish; (c) the side of the stream, wetland or lake is protected at the crossing; (d) any disturbance to the stream channel and stream bank, wetland, or lake bottom, as applicable, is mitigated.	AB is equal to BC
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28	Environmental Protection and Management Regulation	7/6	The following objectives with respect to wildlife and wildlife habitat are prescribed for the purposes of the definition of "government's environmental objectives" in section 1 (2) of the Act: (a) that operating areas not be located within any of the following:(iii) a fisheries sensitive watershed, unless an operating area will not have a material adverse effect on the ability of the fisheries sensitive watershed to protect downstream fisheries and watershed values		AB and BC have equivalent requirements pertaining to the code of practice for water crossings.
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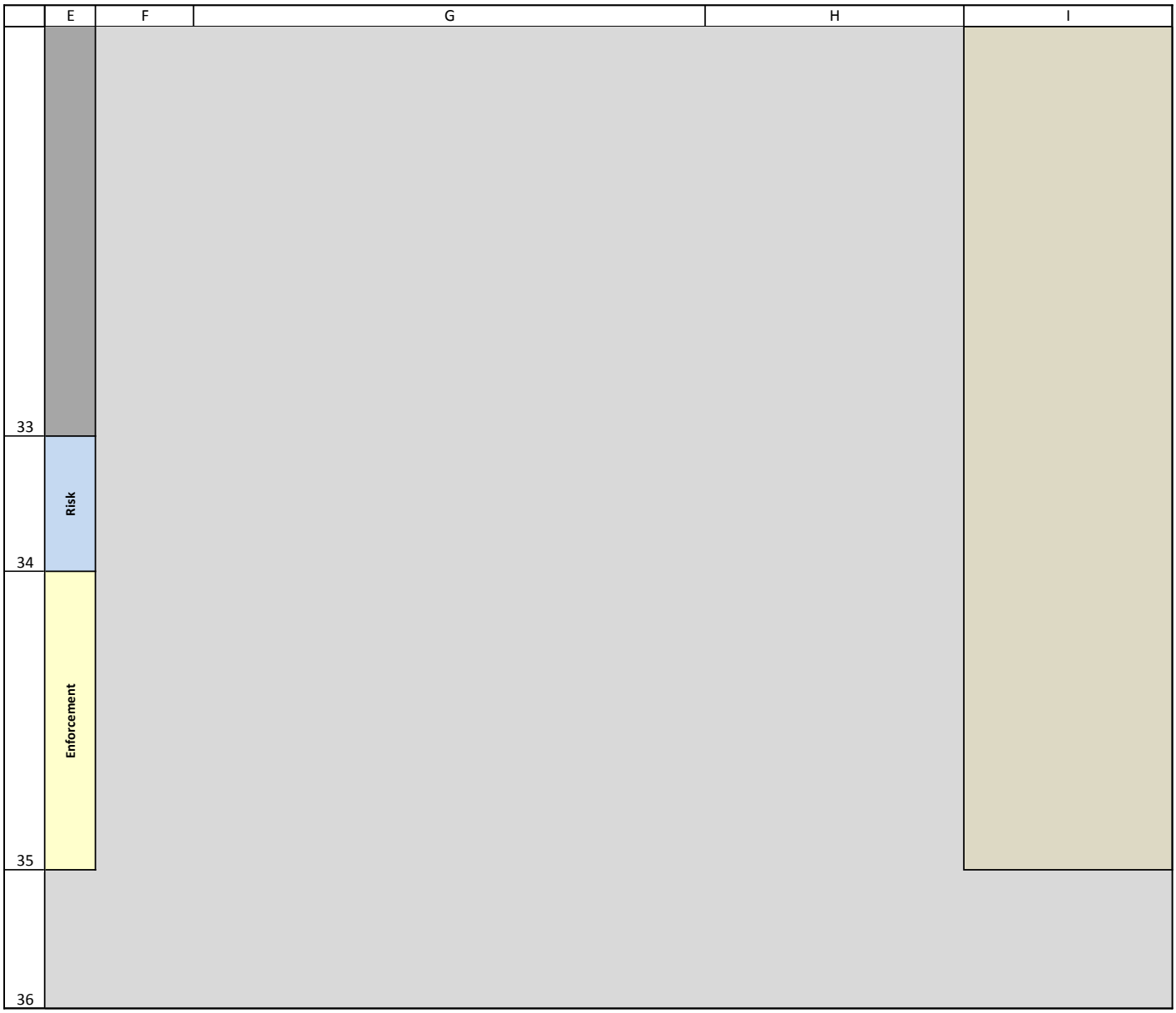
32		6/ part 2 Water	The following objectives with respect to water quality, quantity and timing of flow are prescribed for the purposes of the definition of "government's environmental objectives" in section 1 (2) of the Act: (a) that wellsites, facility areas and pipeline corridors not be located within (i) 100 m of where water is diverted by a waterworks or stored in a water storage reservoir, or (ii) 100 m of where water is diverted by a water supply well or the ground water capture zone for the water supply well, whichever is greater, unless (iii) any adverse affects on the waterworks, water supply well, water storage reservoir or ground water capture zone can be effectively mitigated, or (iv) the person proposing to locate the operating area is the holder of the authorization for the waterworks, water supply well or water storage reservoir;	Wellsites, facility areas and pipeline corridors not be located within (i) 100 m of where water is diverted by a waterworks or stored in a water storage reservoir, or (ii) 100 m of where water is diverted by a water supply well or the ground water capture zone for the water supply well, whichever is greater, unless (iii) any adverse affects on the waterworks, water supply well, water storage reservoir or ground water capture zone can be effectively mitigated, or (iv) the person proposing to locate the operating area is the holder of the authorization for the waterworks, water supply well or water storage reservoir.	AB and BC are equivalent on requirements pertinent to facilities location near water bodies.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1	**Topic**	**STANDARDS**			
2	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (Level 3)**
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4	CSA Z662.11	145/6.2.10.2	Open-cut crossings shall be subject to the following requirements: (a) Carrier or any casing pipes shall be laid on suitable bedding material with even bearing throughout their length and shall be installed in a manner that prevents the formation of a waterway along them. (b) Backfill shall be compacted adequately to prevent settlement detrimental to the facility being crossed.		CSA is a requirement by all regulatory jurisdictions.
5		183/7.10.3.1	All welds within the limits of uncased road and railway crossings, all welds within the limits of water crossings, all pressure-retaining welds that will not be pressure tested in place, and a minimum of 15% of all other production welds made each day shall be nondestructively inspected (a) for 100% of their lengths; (b) as specified in Clause 7.10.4; and(c) where such welds are butt welds, using radiographic or ultrasonic methods, or a combination of such methods. Where the daily results of the nondestructive inspection are unacceptable to the company, more nondestructive inspection or remedial actions shall be required. Note: Welds that are inspected should be reasonably representative of the daily production.		
6		145/6.2.10.4	Water crossings shall be subject to the following requirements: (a) Care shall be taken not to overstress the pipe during installation. b) Piping shall be installed to the required plan and profile dimensions and shall be laid so that no portion is unsupported or resting on objects that are likely to damage the coating or the pipe. (c) Water crossings shall be identified as specified in Clause 10.5.3.7.		
7		145/6.2.10.3	Bored crossings shall be subject to the following requirements: (a) Bored installations shall have hole diameters that are as close as practical to the outside diameter of the carrier or any casing pipes. (b) Where it becomes necessary to abandon bored holes, or where the space between pipes and the hole is excessive, prompt remedial measures shall be taken.		
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19	CSA Z662.11	251/10.6.4.2	Underwater crossings shall be inspected periodically for adequacy of cover, accumulation of debris, and other conditions that can affect the safety or integrity of the crossing.		
20		251/10.6.4.1	Special consideration shall be given to the inspection and maintenance of pipeline crossings of water		
21		251/10.6.4.3	Aerial pipeline crossings and their supporting structures shall be inspected periodically and maintained in a safe, usable condition.		
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23	CSA Z662.11	249/10.5.3.7	Water crossings shall be subject to the following requirements: (a) Pipelines crossing waterways (including open drainage systems) that can be subjected to periodic dredging or other construction activity shall be identified by signs that are as specified in Clause 10.5.3.3. (b) Where pipelines cross navigable waterways that support commercial marine traffic, signs shall indicate the presence of the pipeline crossing and include a “No Anchorage”* and “No Dredging”* warning. The width of the crossing and the limitations of visibility shall be considered in the establishment of the dimensions of such signs. *The equivalent French wording is “Amarrage interdit” or “Dragage interdit“, respectively.		
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28	CSA Z662.11	103/4.4.8	For HVP and LVP pipelines, valves shall be installed on both sides of major water crossings and at other locations appropriate for the terrain in order to limit damage from accidental discharge. Notes: (1) Consideration should be given to the installation of check valves to provide automatic blockage of the pipeline. (2) A major water crossing means a water crossing that in the event of an uncontrolled product release poses a significant risk to the public or the environment.		
29		103/4.4.6	For HVP and carbon dioxide pipelines, in locations where a failure would constitute an extraordinary hazard, sectionalizing valves shall be equipped for remote operation and the maximum spacing between such valves shall not exceed 15 km.Note: Extraordinary hazards can exist in areas such as major industrial complexes, commercial navigable waters, and densely populated areas.		
30		116/4.12.4.1	The wall thickness of pipe shall be determined as specified in Clauses 4.2, 4.3, and 4.6 to 4.10. Special attention shall be given to the physical characteristics of crossings, such as composition and stability of the bed and banks, waves, currents, scouring, flooding, type and density of water-borne traffic, and other features that can cause adverse effects. Weight-coatings, river weights, screw anchors, or other means shall be used to maintain the position of pipelines under anticipated conditions of buoyancy and water motion.		
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1	**Topic**	**CANADA**			
2	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (Level 3)**
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4	DFO - Fisheries Act	19/37	If a person carries on or proposes to carry on any work, undertaking or activity that results or is likely to result in the alteration, disruption or destruction of fish habitat, or in the deposit of a deleterious substance in water frequented by fish or in any place under any conditions where that deleterious substance or any other deleterious substance that results from the deposit of that deleterious substance may enter any such waters, the person shall, on the request of the Minister — or without request in the manner and circumstances prescribed by regulations made under paragraph (3)(a) — provide the Minister with any plans, specifications, studies, procedures, schedules, analyses, samples, evaluations and other information relating to the work, undertaking or activity, or to the water, place or fish habitat that is or is likely to be affected by the work, undertaking or activity, that will enable the Minister to determine (a) whether the work, undertaking or activity results or is likely to result in any alteration, disruption or destruction of fish habitat that constitutes or would constitute an offence under subsection 40(1) and what measures, if any, would prevent that result or mitigate its effects; or (b) whether there is or is likely to be a deposit of a deleterious substance by reason of the work, undertaking or activity that constitutes or would constitute an offence under subsection 40(2) and what measures, if any, would prevent that deposit or mitigate its effects.		AB is lesser than Government of Canada - AB documents regarding evaluation of how works my affect aquatic habitat was not found.
5			No pipeline may be constructed on, across, over or under an irrigation canal or ditch under the Irrigation Districts Act or a drainage ditch under the Drainage Districts Act without the approval of the owner, or, if approval cannot reasonably be obtained from the owner, without the approval of the Board.		AB equals Government of Canada - both follow *Irrigation Districts Act* or the *Drainage Districts Act*
6	Navigable Water Protection Act	9/13(b)	(1) For the purposes of section 5.1, the Minister may, by order, (b) impose any terms and conditions with respect to the placement, construction, maintenance, operation, safety, use and removal of those classes of works or works that are built or placed in, on, over, under, through or across those classes of navigable waters.		AB is lesser than the Government of Canada - AB documents on the act level stating the same power to impose terms and conditions on water crossings were not found.
7	Canada Oil & Gas Operations Act	63/5.011	No person shall construct or operate a pipeline that passes in, on, over, under, through or across a navigable water unless an authorization to construct or operate, as the case may be, the pipeline has been issued under paragraph 5(1)(b).		AB is equal to the NEB.
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16	National Energy Board Act	3/2	"navigable water" has the same meaning as in section 2 of the Navigable Waters Protection Act;		Equivalent, but definitions differentiate in detail.
17	Navigable Water Protection Act	6/2	"navigable water" includes a canal and any other body of water created or altered as a result of the construction of any work		Equivalent, but definitions differentiate in detail.

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35	**DFO- Fisheries Act**	**25/40**	Every person who contravenes subsection 35(1) is guilty of (a) an offence punishable on summary conviction and liable, for a first offence, to a fine not exceeding three hundred thousand dollars and, for any subsequent offence, to a fine not exceeding three hundred thousand dollars or to imprisonment for a term not exceeding six months, or to both; or (b) an indictable offence and liable, for a first offence, to a fine not exceeding one million dollars and, for any subsequent offence, to a fine not exceeding one million dollars or to imprisonment for a term not exceeding three years, or to both.		AB is lesser than Government of Canada - Government of Canada defines enforcement of policy.
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1	Topic	**US ACTS AND REGULATIONS**			
2		**Source**	**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (Level 3)**
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9	DOT 49 Vol 3 Part 195	29/195.234 e	All girth welds installed each day in the following locations must be nondestructively tested over their entire circumference, except that when nondestructive testing is impracticable for a girth weld, it need not be tested if the number of girth welds for which testing is impracticable does not exceed 10 percent of the girth welds installed that day: (1) At any onshore location where a loss of hazardous liquid could reasonably be expected to pollute any stream, river, lake, reservoir, or other body of water, and any offshore area;		AB equals USA.
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16	DOT 49 Vol 3 Part 192	60/192.612(b)	Each operator shall conduct appropriate periodic underwater inspections of its pipelines in the Gulf of Mexico and its inlets in waters less than 15 feet (4.6 meters) deep as measured from mean low water based on the identified risk.		
17	DOT 49 Vol 3 Part 195	66/ Appendix C	The rule defines a High Consequence Area as a high population area, an other populated area, an unusually sensitive area, or a commercially navigable waterway. (2) Drainage systems such as small streams and other smaller waterways that could serve as a conduit to a high consequence area. (3) Crossing of farm tile fields. An operator should consider the possibility of a spillage in the field following the drain tile into a waterway. (4) Crossing of roadways with ditches along the side. The ditches could carry a spillage to a waterway.		AB is lesser than USA - No definition for high consequence area in AB was found.

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19	DOT 49 Vol 3 Part 195	41/195.412	(a) Each operator shall, at intervals not exceeding 3 weeks, but at least 26 times each calendar year, inspect the surface conditions on or adjacent to each pipeline right-of-way. Methods of inspection include walking, driving, flying or other appropriate means of traversing the right-of-way. (b) Except for offshore pipelines, each operator shall, at intervals not exceeding 5 years, inspect each crossing under a navigable waterway to determine the condition of the crossing.		AB is equivalent to USA.
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23	DOT 49 Vol 3 Part 195		The procedure shall address the following requirements: (xi) Preventing the discharged fluid from causing unacceptable environmental effects such as damage to crops, excessive erosion, soil contamination or contamination of watercourses or bodies of water.		AB is equal to the USA - stating prevention of unacceptable environmental effects including contamination of watercourses or bodies.
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28	DOT 49 Vol 3 Part 195	31/195.260 e	A valve must be installed at each of the following locations: (e) On each side of a water crossing that is more than 100 feet (30 meters) wide from high-water mark to highwater mark unless the Administrator finds in a particular case that valves are not justified.		AB is equivalent to USA.
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34	DOT 49 Vol 3 Part 195	53/195.452	Risk analysis criteria. In identifying the need for additional preventive and mitigative measures, an operator must evaluate the likelihood of a pipeline release occurring and how a release could affect the high consequence area. This determination must consider all relevant risk factors, including, but not limited to: (i) Terrain surrounding the pipeline segment, including drainage systems such as small streams and other smaller waterways that could act as a conduit to the high consequence area;		AB is equivalent to USA.
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1	**Topic**	**AUSTRALIA**			
2	**Source**		**DIRECT QUOTE (Level 1)**	**MAIN POINT (Level 2)**	**COMPARISON (Level 3)**
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19	AS2885-3		Periodic inspections shall be carried out to identify actual or potential problems that could affect the integrity of the pipeline. The operating authority shall plan and perform any maintenance required to rectify and manage any such problems. Inspections shall be carried out by approved and appropriately trained and experience personnel. The inspection and assessment of a pipeline shall include the following: (c) Inspections of actual or potential problems identified in the ongoing risk assessment such as river or creek crossings, areas prone to ground instability and pipe supports at bridge crossings. NOTE: Where available, intelligent pigging results should also be considered when assessing pipeline integrity.		AB is lesser than AUS - AB verbiage regarding the identification of potential problems, risk assessment of pipe supports at bridge crossings and intelligent pigging to assess pipeline integrity when available was not found.
20	AS2885-3		The operating authority shall have measures in place so as to remain reasonably assured that, for underwater crossings— (a) the depth of cover, if the pipeline is buried, remains adequate; (b) that scouring has not caused any part of the pipeline to be unsupported beyond allowable freespan length; and (c) that there is no accumulation of debris or silt that could affect the stability and safety of the pipeline. In the event that the operation is not so assured, further inspections are to be undertaken. Additional inspections shall be made following severe floods, storms or earthquakes which could have affected the integrity of the crossing. Corrective action should be initiated immediately when inspection reveals an unsafe condition.		AB is lesser than AUS - AB verbiage equal to measures of assurance required by AUS not found.
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23	AS2885-3		Signs shall be maintained along the route so that the pipeline can be properly located and identified from the air, ground, or both, as appropriate to each particular situation, as identified in the risk assessment. Maintenance of pipeline marking shall ensure the following: (b) Signs at the landfall of submerged crossings or submarine pipelines shall be visible from a distance of at least 100 m on the water side of the landfall. Maintenance of pipeline marking shall also include maintaining or adding— (i) signs or other markers at each change of direction, at each side of permanent watercourses, at each side of road and rail crossings and at crossings of each property boundary;		AB is equivalent to Australia
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1	**Topic**	**UK**			
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35	HEALTH AND SAFETY The Control of Major Accident Hazards Regulations	**15/21**	21.—(1) The competent authority shall notify the European Commission as soon as practicable of any major accident meeting the criteria specified in Part 1 of Schedule 7. The criteria referred to in regulation 21(1) are as follows— (ii)significant or long-term damage to freshwater and marine habitats: 10 km or more of river or canal, 1 ha or more of a lake or pond, 2 ha or more of delta, 2 ha or more of a coastline or open sea; (iii)significant damage to an aquifer or underground water:		AB equivalent to UK.
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