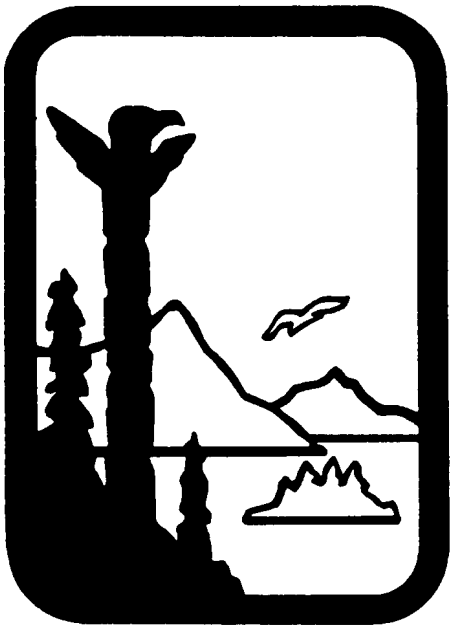
Department of Environmental Conservation
Division of Spill Prevention & Response



Oil Pollution Prevention Regulations
Proposed Regulations and Discussion Summary

January 30, 2006

NOTE: This summary is provided for informational purposes only.

Frank Murkowski
Governor

Kurt Fredriksson
Commissioner

Introduction

The Alaska Department of Environmental Conservation (ADEC) is engaged in a multi-year, multi-phase project to comprehensively review and update the oil discharge prevention and contingency plan (c-plan) regulations in 18 AAC 75. The current phase is a review and update of oil spill prevention regulations relating to all regulated operators. The oil spill prevention regulations are generally found within 18 AAC 75 Article 1 and link to the prevention plan requirements located at 18 AAC 75.425(e)(2).

We engaged in extensive informal discussions with the public prior to developing these proposed regulations, starting with a July 2004 letter to all oil discharge prevention and contingency plan holders requesting input on potential regulatory changes and a workshop in Anchorage in November 2004 on the same topic. We then published a discussion paper on potential regulation changes on April 1, 2005 and requested public comment. ADEC received informal comments from the following groups:

- Alyeska Pipeline
- BP Exploration (Alaska) Inc.
- Caliber Inspection
- ConocoPhillips Alaska, Inc.
- Cook Inlet Keeper
- Cook Inlet Pipeline
- Cook Inlet RCAC
- Cornell and Associates
- Delta Western, Inc.
- Doyon Drilling
- North Slope Borough
- Offshore Systems, Inc.
- Prince William Sound RCAC
- SeaRiver Maritime, Inc.
- Tesoro Alaska Company
- Unocal Alaska
- U.S. Air Force
- VECO Alaska
- Yukon Fuels Company

These comments, along with further discussions, both internally within ADEC and informally with various stakeholders, were used to improve the discussion paper's regulatory concepts.

Because of the significant changes that were made as a result of the informal comment process, ADEC released a second informal discussion paper in September 2005 for additional comment before developing formal proposed regulations. Informal comments were received from the following groups:

- Aircraft Service International Group
- Alyeska Pipeline
- Jim Barry
- BPXA
- Cascadia Wildlands Project
- Chevron
- ConocoPhillips
- Cook Inlet Keeper
- Cook Inlet RCAC
- Delta Western
- Kerr McGee
- LCMF, LLC
- M-I SWACO
- Nanuq, Inc.
- North Slope Borough
- Prince William Sound RCAC
- Steel Tank Institute
- Tesoro
- Unocal

The results of analysis of these comments were then incorporated into the proposed regulatory language of this document. The end result is a significant revision to the current regulations. The rationale and intent of ADEC is described after each regulatory section later in this document, but certain key general concepts are discussed below.

Significant Changes & Regulatory Issues Addressed in this Rulemaking

The following is a brief discussion of the significant changes proposed in this document.

Regulation of Flow lines Associated with Oil Production Facilities

There has been strong support over several years for ADEC to modify or expand its regulatory scope to include gathering lines, flow lines, subsea multi-phase pipelines, and refined product lines. ADEC conducted a careful review and analysis of these comments and the underlying assumptions, and agrees that regulatory oversight of multi-phase flow pipelines that are generally referred to as flow lines is warranted.

In reaching this conclusion, ADEC used a "demonstrated need" criterion process. Demonstrated need in this case can be understood as consisting of:

- Historical spill data indicating a need for better oil discharge prevention measures regarding flow lines,
- Lack of other federal or state oversight of flow lines, and
- Documented requests for specific regulatory oversight of flow lines under the contention that the statutory responsibilities of the department under AS 46.03.010 et al. are not being met.

ADEC recorded spill data appears to indicate that roughly 400 spills between 1992 and 2005 on the North Slope involved flow lines, totaling roughly 500,000 gallons of oil or multi-phase mixtures discharged, and roughly 25 spills from flow lines in Cook Inlet during the same time period. Spills from unregulated flow lines appear to make up more than a third of the pipeline spills on the North Slope by number. The majority of the discharges directly attributable to flow lines are as a result of structural or mechanical failure.

Federal regulatory oversight of these lines, under the U. S. Department of Transportation, is codified in 49 CFR Part 195. The federal regulatory definition of "gathering lines" is

> "Gathering line means a pipeline 219.1 mm (8 5/8 in) or less nominal outside diameter that transports petroleum from a production facility."[1]

Specifically excluded from federal regulation are: gathering lines in rural areas, lines less than 1 mile long, and gathering lines located offshore.[2] Additionally, the Pipeline Safety Act of 1992 excludes gathering lines less than 6 inch diameter from regulation. It should be noted that most flow lines in Alaska range in size from 6 inch to 24 inch in diameter.

[1] 49 CFR 195.2
[2] 49 CFR 195.1(b)

The federal government has recognized that gathering lines pose a potentially high risk to the environment[3], but federal regulatory oversight has been slow or nonexistent.[4] The U.S. Department of Energy is just beginning to survey the makeup of gathering lines nationwide and current state regulatory oversight mechanisms.[5] Federal regulation, if it happens, is likely many years away and will likely be directed towards tank battery systems and small diameter (6 to 8 inch) lines, which are the common arrangement for gathering lines in the lower 48, rather than the longer, larger-diameter flow lines common in Alaska.

The common use of flow lines in Alaska appears to be unique in the United States. There are some similarities between the Cook Inlet platforms and offshore platforms in the Gulf of Mexico and coastal California, but nowhere is the expansiveness of the North Slope flow lines mirrored in the lower 48.

Most of the non-common carrier pipelines on the North Slope are not even considered as gathering lines by either the oil industry or the federal regulatory agencies. BPXA has stated that they "do not operate "gathering lines" as this term is defined in 49 CFR Part 192 and 195".[6] BPXA does operate 6 or 7 low stress (<20% SMYS) pipelines or segments on the North Slope. They are all larger than 8 5/8" outside diameter. Because they are larger in diameter than the federal regulatory definition of gathering lines and are operated at less than 20% SMYS, BPXA apparently asserts that the exemption clause in 49 CFR 195.1(b)(3) applies to these lines.

In 2003 the USDOT/RSPA Office of Pipeline Safety Gathering Line Team visited the North Slope and met with BPXA and ConocoPhillips to discuss the unique characteristics of North Slope oil production. Their findings were that the North Slope had

- 3,000 pipelines known as "well lines" that ranged from 2 to 8 inches in diameter;
- 500 pipelines known as "flow lines" that ranged from 6 to 60 inches in diameter[7]; and
- 12 pipelines known as "transportation lines" that ranged from 2 to 24 inches in diameter[8].

They also noted that most pipelines were also referred to as "production pipelines" and were not considered by the operators to be under the jurisdiction of USDOT.[9]

It should also be noted that the current trend for new offshore production is to send multi-phase oil product via flow lines from offshore facilities to an onshore processing unit. Examples include the currently proposed Oooguruk Development (Pioneer) and Nikaitchuq (Kerr-McGee) projects on the North Slope and the Osprey platform in Cook Inlet. Large diameter "flow lines" from these projects are, or would be, exempt from federal and current state oil discharge prevention regulations.

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[3] Pipeline Safety Act of 1992 (P.L. 102-508, Oct. 24, 1992), Section 208(b)
[4] See, for example, GAO reports GAO/RCED-00-128 of May 2000 and GAO-02-785 of August 2002
[5] Telephone conversation with Elizabeth Hocking, Argonne National Laboratory, August 3, 2005
[6] Letter from Garry Meek, BP, to Stacey Gerard, USDOT, dated January 16, 2004, in reference to Docket No. RSPA-03-15864
[7] These flow lines are most likely the multi-phase pipelines that form the corpus of gathering line spill sources.
[8] The 2" line is likely a natural gas liquids (NGL) line. Most of the others are regulated by ADEC as crude oil transmission pipelines. At least seven of these lines are not regulated by USDOT because they are operated as "low stress" pipelines.
[9] USDOT/RSPA memo from Frederick Joyner dated August 14, 2003

ADEC has received numerous comments from many public organizations over the course of several years requesting that the department specifically address the regulation of gathering flow lines, most recently by Cook Inlet RCAC[10], North Slope Borough[11], and Prince William Sound RCAC[12].

During meetings with the Alaska Oil & Gas Conservation Commission (AOGCC)[13] and other state agencies on the issue of gathering and flow lines, AOGCC indicated that they were concerned about the lack of regulatory oversight of these pipelines, particularly in light of the aging infrastructure, and that they had also received requests from other groups for regulations pertaining to flow lines. AOGCC and the Alaska Department of Natural Resources (ADNR) both support ADEC's proposed regulation of flow lines.

There are no commonly-accepted definitions for gathering lines and flow lines. For purposes of these regulations, ADEC has proposed a regulatory definition of flow lines as consisting of pipe carrying oil or multi-phase petroleum products between a well and a processing unit or common carrier or sales pipeline regulated under 18 AAC 75 as a "crude oil transmission pipeline"[14]. This includes lines that are generally referred to as flow lines as well as many lines commonly referred to as gathering lines. In general, the rest of the gathering lines in Alaska are already regulated by ADEC as crude oil transmission pipelines.

Alaska Statute 46.04.900(19) defines a "production facility" as specifically including "gathering and flow lines" for purposes of oil pollution control. 18 AAC 75 Article 1 regulations regarding production facilities are generally located in 18 AAC 75.045 "Operating Requirements for Exploration and Production Facilities".

The current version of 18 AAC 75.045 is predominantly directed towards offshore platforms. The only reference to pipe is in 18 AAC 75.045(g) which states that "Piping associated with an exploration or production facility must meet the applicable requirements of 18 AAC 75.080 [Facility Piping Requirements for Oil Terminal, Crude Oil Transmission Pipeline, Exploration, and Production Facilities]."

18 AAC 75.080 applies to "facility oil piping", a term which is not currently defined in regulation or statute, although this draft contains a proposed definition of the term. Based upon a review of the relevant statutes and regulations, ADEC is of the opinion that 18 AAC 75.080 does not effectively address flow lines. Therefore we are proposing a new section of regulations to specifically address flow lines.

Adoption of National Industry Consensus Standards

The current regulations list 87 industry standards and recommended practices, the majority of them out of date and without clear indication in the regulations regarding their applicability. We

[10] Letter of June 15, 2005, requesting regulation of subsea gathering lines
[11] Letter of June 20, 2005, incorporating previous comments made in 2003 and 2004 regarding flow lines
[12] Letter of June 30, 2005, requesting improved regulation of gathering lines, process flow lines, and refined product pipelines
[13] Meeting with representatives of AOGCC, RCA, ADNR, ADEC, and JPO, August 01, 2005 in Anchorage, AK, follow-on meeting held August 30, 2005
[14] "transmission pipeline" is defined in 18 AAC 75.990(134) as "a pipeline through which crude oil moves in transportation, including line pipe, valves, and other appurtenances connected to line pipe, pumping units, and fabricated assemblies associated with pumping units; "transmission pipeline" does not include gathering lines, flow lines, or facility piping".

are proposing to reduce the number of standards down to 21, and to specifically call them out in regulation in the appropriate context.

Our purpose is to define baseline minimum performance standards which will effectively reduce or mitigate the threat of an unintended oil discharge in accordance with our statutory authority and responsibility. We intend to use these standards as reference materials during our normal, routine facility inspection program.

In several instances we are proposing the adoption of industry standards into regulation with exceptions. Where we have proposed excepting certain provisions of a standard, such as the similar service inspection process in American Petroleum Institute (API) Standard 653 for inspection of oil storage tanks, we have done so after determining that the excepted provisions are inadequate or inappropriate to the task at hand. Where we have specifically called out provisions of a standard, such as the initial system testing section of API Publication 1130 for computational pipeline monitoring, we do so to specifically call out that item as a requirement, regardless of the wording of the standard or recommended practice.

During the discussions leading up to this document, several groups questioned the adoption of recommended practices as regulation. ADEC agrees with the approach taken by the U.S. Dept. of Transportation Office of Pipeline Safety[15]:

> "… we proposed the following levels of compliance for the different types of API and NFPA documents that would be incorporated by reference:
>
> · **Standard, Specification or Code**-An operator would be expected to comply with the provisions.
>
> · **Recommended Practice-**An operator would be expected to follow the provisions unless the operator notes in the procedural manual the reasons why compliance with all or certain provisions is not necessary for the safety of a particular breakout tank or tanks.
>
> · **Publication**-These provisions provide guidelines, safety practices and precautions for the operator's review and consideration for inclusion in the procedural manual.
>
> By this proposal we meant that operators would have to meet the referenced parts of standards, specifications, and codes according to the terms of those parts. Although operators could decide not to abide by referenced parts of recommended practices or publications, we did not intend for them to have this same discretion regarding compliance with referenced parts of standards, specifications, or codes. Therefore, in the final rules, none of the references to parts of standards, specifications, or codes may be interpreted to include a statement in the document's foreword or elsewhere outside the referenced part that would absolve the operator of its responsibility to comply with the referenced part. For example, the statement in section 1-1.3 of NFPA 30 that the code does not apply to "[t]ransportation of flammable and combustible liquids, as governed by the U. S. Department of Transportation" does not nullify the references to particular sections of NFPA 30 in final Sec. 195.264.
>
> Nonetheless, if the referenced part of a standard, specification, or code allows or calls for the use of engineering judgment, in determining compliance with the referenced part, we will not object to the use of judgment. We will, however, compare the judgment used

[15] 64 FR 15926, April 2, 1999

against what is reasonable under the circumstances. If an operator wishes to achieve a particular objective in a way that differs from the referenced part of a standard, specification, or code or falls outside the range of allowable judgment, it can request permission to do so by applying to us or the appropriate state agency, as applicable, for a waiver of the referenced part (see 49 U.S.C. 60118)."

Revision of Facility Piping Regulations

The current regulations for facility piping have a number of problems. To begin with, there is no regulatory definition of what constitutes regulated facility piping. We are proposing a definition in 18 AAC 75 Article 9. The current regulations do not specify any design, construction, inspection, or maintenance standards, and are primarily concerned with buried metallic piping. We are proposing standards for design and construction, maintenance (including corrosion control and cathodic protection), and inspection of facility piping. We are also acknowledging the use of non-metallic piping and providing specific requirements for aboveground piping.

Because of the significant changes, we are proposing to repeal the current facility piping section, and to readopt it in a more logical and consistent format.

Standards for Shop-Fabricated Aboveground Oil Storage Tanks

The current regulations lump all aboveground oil storage tanks together, whether field-constructed of shop-fabricated, and only identifies baseline design and inspection standards for field-constructed tanks. Shop-fabricated tanks have evolved considerably since the current regulations were adopted, and form an increasing percentage of the regulated tanks in Alaska. Because many shop-fabricated tanks are designed and built to advanced standards that incorporate multiple spill prevention features into the tank, the department contends that it is appropriate to break these tanks out into their own regulatory section and to recognize the higher level of spill prevention afforded by these tank designs.

We are also proposing to exempt shop-fabricated oil storage tanks built to advanced design and construction standards from the secondary containment requirements of 18 AAC 75.075.

Computational Pipeline Monitoring of Crude Oil Transmission Pipelines

Leak detection technology has greatly improved since 18 AAC 75.055 became effective in 1992. In particular, Computational Pipeline Monitoring (CPM) systems have become capable of detecting smaller leaks over time due to enhancements in both software and support systems. We are proposing an national consensus standard, API 1130, as a required performance standard for CPM systems.

Spill Prevention Training and Recordkeeping Requirements

The current regulations require that

> "The owner or operator shall ensure that all personnel are appropriately and regularly trained regarding company and state pollution prevention measures that are applicable to

each person's duties. After completing a training course or program, each participant shall sign and date a statement that lists the course content."[16]

This is unnecessarily ambiguous and overreaching. We are proposing clearer, task-based training requirements, along with acknowledgement in regulation of the widespread use of computer databases to track training.

Pre-Booming of Oily Ballast Water Transfers

ADEC is proposing expanding the requirement for pre-booming to include oily ballast water.

Regulatory Issues Not Addressed in this Rulemaking

Several issues came up during our discussions which we have elected not to address in this rulemaking.

Tanker Escorts

There is significant public concern that the current Prince William Sound (PWS) crude oil tanker escort system, in its entirety, be adopted into regulation. ADEC does not intend to address this issue in this rulemaking.

ADEC notes that the PWS tanker escort system was originally put in place is response to U.S. Coast Guard regulations, and that the current PWS crude oil tanker escort system is required as a condition of approval for current state-required tanker c-plans for the Prince William Sound operating area, and that these c-plans are due for renewal in November 2007.

ADEC has discussed the status of the PWS crude oil tanker escort system with the U.S. Coast Guard. It is anticipated that the department and the Coast Guard will cooperate in development of any new PWS crude oil tanker escort regulations. In the event that the federal government does not proceed with this rulemaking, the state, at this time, intends to resume a careful and thorough regulatory process to develop and institute state PWS tanker escort regulations. This regulatory process would include, but not be limited to, a consideration of predicted tanker fleet characteristics, changes in escort vessel capabilities, an updated PWS crude oil risk assessment, and other relevant factors. That said, an acceptable and probably more desirable alternative would be for the state to collaborate, in a non-regulatory process, with the Coast Guard, the PWS crude oil tanker operators, and the PWS RCAC to determine the appropriate PWS tanker escort system. The escort system developed through this process could then be submitted by the tanker operators as part of their 2007 c-plan renewal application.

The public has also requested state regulations requiring tanker escorts in Cook Inlet. The department notes that significant study and discussion of this subject has occurred since the early 1990's, including the October 2000 U.S. Coast Guard - sponsored Cook Inlet Ports and Waterways Safety Assessment, with the general conclusion that tanker escorts in Cook Inlet were not warranted. However, ADEC understands that the USCG is considering a new Cook Inlet risk assessment, based upon updated data. Therefore, the department will defer judgment until this process is completed.

[16] 18 AAC 75.007(d)

Crude Oil Transmission Pipeline Valves

There were requests that ADEC adopt regulations to ensure the safe and reliable functioning of crude oil transmission pipeline (COTP) valves. For most of the COTP valves regulated by ADEC, valve operation, maintenance, and inspection requirements are established by the USDOT. However, there are crude oil transmission pipelines regulated by ADEC that fall off the USDOT regulatory framework for a number of reasons, primarily because of their low flow pressure.

ADEC does not intend to duplicate regulations, and including regulations for all COTP valves regarding valve maintenance would have that effect. During the initial development of 18 AAC 75 Article 1 in 1991, ADEC responded to public comments about adding valve requirements (installation standards, maintenance and inspection standards) by stating that "These requirements are covered by the U. S. DOT." Earlier responses in the same document discussed the intention to not duplicate federal regulations, but to fill gaps where necessary.[17] We are not considering additional regulation of crude oil transmission pipeline valves at this point.

Federal Preemption

Some pipeline operators commented that the scope of state regulation regarding crude oil transmission pipelines conflicts with federal preemption statutes under 49 USC 60104(c). This issue has been raised before, most recently in 1996[18]. The department stands by the opinion issued in 1997, namely that crude oil transmission pipelines within the state fall under dual jurisdiction for purposes of environmental protection.[19]

Similarly, several pipeline operators made the observation that common carrier pipelines are already heavily regulated under USDOT regulations at 49 CFR 190 through 195 and 199. The department agrees that the common carrier pipelines within Alaska are regulated by USDOT under 49 CFR 190 through 195 and 199, but also notes that the federal regulations are minimum national standards which may not be sufficient for the specific and unique geographic and environmental conditions in Alaska, and that more stringent regulation is justified in certain areas.

Adoption of International Safety Management (ISM) System for Vessels

There have been suggestions that ADEC incorporate the ISM code (33 CFR 96) for shipping into state regulations. We consider this an unnecessary duplicative of federal regulations.

Along similar lines, suggestions requiring submission of ISM documentation, including ABS audits, as part of the C-Plan application and approval process were rejected. ADEC does not believe that requesting U.S. Coast Guard approved certifications as part of the public review of a contingency plan provides a net benefit to the approval process. The ISM certificates are available onboard the vessels for our inspectors to view during inspections.

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[17] ADEC, "Responsiveness Summary, Public Comments on the July 8, 1991 Public Review Draft of Revised Oil Pollution Control Regulations", dated October 10, 1991

[18] Alyeska Pipeline Service Company White Paper "Federal Pipeline Safety Act Preemption of Article 1 of 18 AAC 75", dated October 28, 1996

[19] ADEC, letter from Tom Chapple, IPP Program Manager, to Jim Sweeney, Alyeska Pipeline Service Company, dated April 8, 1997

Proposed Regulatory Changes to 18 AAC 75 Articles 1, 4 & 9

Reading and understanding state regulations can be confusing for people who are not familiar with how state regulations are laid out. To assist you in understanding the proposed regulations, please note that state regulations are laid out in the following manner:

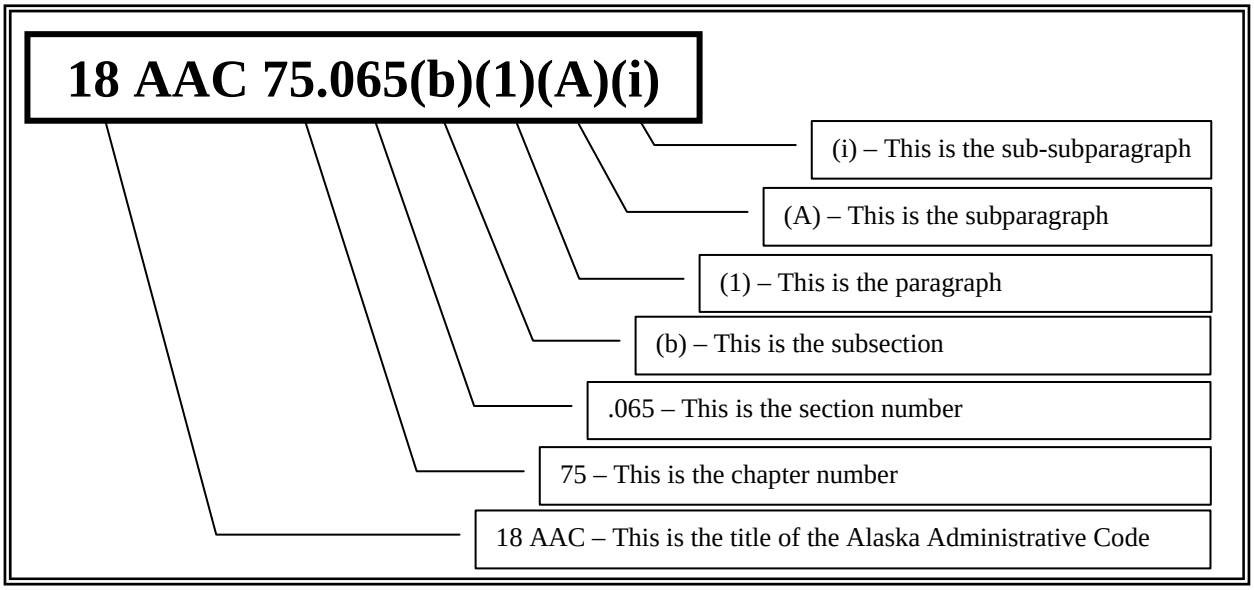

Figure 1 Alaska Regulatory Numbering System

In the following text, the proposed changes generally follow the formatting requirements of the "Drafting Manual for Administrative Regulations", 15th Edition, June 2002, and its Supplement dated September 2004, as promulgated by the State of Alaska Department of Law. The changes are indicated as follows:

Underlined text indicates lead-in text or prefatory notes that explain the changes to the following text.

[CAPITALIZED TEXT] indicates current regulatory text proposed for deletion.

Bold, underlined text indicates proposed changes to the regulations.

[…] indicates unchanged chunks of regulatory text.

The rationale and a discussion of the proposed changes are found at the end of each regulatory section. Explanatory footnotes are also included to provide additional information regarding regulatory intent.

NOTE: The footnotes themselves are not part of the proposed changes to the regulations.

For comparison purposes, a complete copy of the current 18 AAC 75 regulations can be found online at http://www.state.ak.us/dec/regulations/index.htm.

18 AAC 75, Article 1 - Oil Pollution Prevention Requirements

18 AAC 75.007. General oil pollution prevention requirements

18 AAC 75.007(a) is amended to read:

(a) Except where application of the requirements of **18 AAC 75.005 – 18 AAC 75.085**[20] [18 AAC 75.005 - 18 AAC 75.090] 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)**[21].

18 AAC 75.007(c) is amended to read:

(c) If a requirement of **18 AAC 75.005 – 18 AAC 75.085** [18 AAC 75.005 - 18 AAC 75.090] and a corresponding requirement of federal law differ and application of the requirement of **18 AAC 75.005 – 18 AAC 75.085** [18 AAC 75.005 - 18 AAC 75.090] would not be preempted by federal law, the more stringent requirement applies.

18 AAC 75.007(d) is repealed:

(d) **Repealed**. __/__/____ [22]

[THE OWNER OR OPERATOR SHALL ENSURE THAT ALL PERSONNEL ARE APPROPRIATELY AND REGULARLY TRAINED REGARDING COMPANY AND STATE POLLUTION PREVENTION MEASURES THAT ARE APPLICABLE TO EACH PERSON'S DUTIES. AFTER COMPLETING A TRAINING COURSE OR PROGRAM, EACH PARTICIPANT SHALL SIGN AND DATE A STATEMENT THAT LISTS THE COURSE CONTENT].

18 AAC 75.007(e) is amended to read:

(e) The owner or operator shall **have in place**[23] [INSTITUTE] programs designed to ensure that each drill operator[24], each person who has navigational, towline, security, or maintenance duties, and any other person **directly**[25]responsible for an activity that might result in a violation of this chapter is free of substance-abuse or medical **condition**[26] [PROBLEM] that would impair that person's ability to do that person's job. **The requirements of this section may be met**

[20] Technical change to reflect the repeal of 18 AAC 75.090
[21] Technical change to add the correct statutory reference to indicate that railroad tank car operators must meet the requirements of Article 1.
[22] Text relocated to new section, 18 AAC 75.020.
[23] Wording changed for clarity.
[24] "drill operator" is intended to mean the term as it exists in common usage, to include all manner of technical personnel operating oil well drilling equipment at a well site.
[25] Wording change to clarify zone of responsibility
[26] Changed to match federal terminology and practice

(1) for a railroad, by a program in accordance with 49 CFR Part 219, as amended through October 1, 2003 and adopted by reference;

(2) for a pipeline, by a program in accordance with 49 CFR Part 199, as amended through September 11, 2001 and adopted by reference; or

(3) for a vessel, by a program in accordance with 46 CFR Part 16, as amended through October 1, 2001 and adopted by reference. [27]

[FOR A RAILROAD, THE REQUIREMENTS OF THIS SUBSECTION ARE SATISFIED BY THE IMPLEMENTATION OF PROGRAMS THAT MEET THE REQUIREMENTS OF THE FEDERAL RAILROAD ADMINISTRATION FOR THE CONTROL OF ALCOHOL AND DRUG USE AND FOR MEDICAL MONITORING OF THE QUALIFICATIONS OF EMPLOYEES.]

18 AAC 75.007(g) and (h) are repealed:

(g) **Repealed. __/__/____** [28]

[THE OWNER OR OPERATOR SHALL MAINTAIN FOR THE LIFE OF THE FACILITY OR OPERATION, A HISTORY SPILLS OVER 55 GALLONS, INCLUDING THE SOURCE, CAUSE, AMOUNT, AND CORRECTIVE ACTION TAKEN].

(h) **Repealed.** __/__/____ [29]

[THE OWNER OR OPERATOR SHALL PREPARE AND MAINTAIN RECORDS TO DOCUMENT TRAINING, INSPECTIONS, TESTS, MAINTENANCE, AND REPAIRS REQUIRED BY 18 AAC 75.005 - 18 AAC 75.090. UNLESS SPECIFIED OTHERWISE, RECORDS MUST BE KEPT FOR AT LEAST THREE YEARS AND MUST BE AVAILABLE FOR INSPECTION AND COPYING BY THE DEPARTMENT UPON REQUEST] (Eff. 5/14/92, Register 122; am 4/4/97, Register 142; am 12/14/2002, Register 164; am__/__/____, Register____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070
AS 46.04.055

Rationale & Discussion

The proposed changes in 18 AAC 75.007 are predominantly technical in nature. 18 AAC 75.007(e) has been updated to reference federal drug and alcohol programs that were not in existence when the regulations were originally drafted, and several paragraphs dealing with training and recordkeeping are proposed for repeal with the text being relocated to a new section developed specifically for those topics.

[27] The additional text clarifies that appropriate federal regulations will be deemed acceptable in lieu of a program developed specifically to meet 18 AAC 75.007(e).
[28] Topic moved to a new section, 18 AAC 75.020
[29] Ditto.

18 AAC 75.015. Waiver

18 AAC 75.015(a) is amended to read:

(a) The department may waive a requirements of **18 AAC 75.005 – 18 AAC 75.085** [18 AAC 75.005 – 75.090] if the owner or operator demonstrates to the department's satisfaction that an equivalent level of protection will be achieved by using a technology or procedure other than the technology or procedure required by **18 AAC 75.005 – 18 AAC 75.085** [18 AAC 75.005 - 18 AAC 75.090]. (Eff. 5/14/92, Register 122; am 5/26/2004, Register 170; am __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.055 AS 46.04.070
AS 46.04.030

Rationale & Discussion

The proposed changes are minor technical revisions.

18 AAC 75.020. Oil discharge prevention training & recordkeeping

18 AAC is amended by adding a new section to read:

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[30] regulated under 18 AAC 75.005 - 18 AAC 75.085 are appropriately and regularly trained regarding[31] company and state oil pollution prevention measures that are applicable to each position's duties.

(b) Personnel training programs shall include the following:

(1) a listing of each position with job duties listed under (a) 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 (b)(1)[32]; and

(3) a listing of training objectives[33] and the means of achieving them, including training subjects, training schedules, frequency, and type.

[30] "Oil storage and transfer equipment" will be construed in its most inclusive form, to include tanks, secondary containment, piping, hoses, pumps, valves, leak detection systems, and any and all appurtenances to such equipment.
[31] "Appropriately and regularly" is best determined by specific job duty criteria, but minimum frequency will generally be considered as annual unless specific factors indicate a shorter time interval.
[32] "Licenses, certifications, or other prerequisites" would include, by way of examples, USCG licensing, OSHA mandated training, drug and alcohol testing requirements, commercial driver licenses, respirator fit-test certifications, etc.

(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, 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[34] 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. (Eff. __/__/____, Register____)

Authority: AS 46.03.020

Rationale & Discussion

ADEC notes that human factors were the major cause of 26% of all reported spills between 1995 and 2002[35]. As a result, ADEC is creating a new section, 18 AAC 75.020, specifically covering oil discharge prevention training and recordkeeping. The new section attempts to clarify the training required and sets recordkeeping requirements. Additionally, the proposed draft language of 18 AAC 75.425(e)(2) explicitly lists prevention training programs as part of the prevention plan portion of the c-plan.

ADEC proposes to essentially keep the current wording of 18 AAC 75.007(d), transferring it to the new section as paragraphs (a) and (c). The department intends to continue the current practice of accepting training rosters, personnel training records, and training class outlines as meeting the requirement for a signed and dated statement listing the course or program content. We are proposing new language in 18 AAC 75.020(c) to indicate how the department would verify compliance.

The department's intention is that these are minimum standards for training, and that operators are free to develop training programs that exceed the minimum. In some cases, training required by federal regulation may meet state requirements. For example, onshore facilities required to train personnel in accordance with 40 CFR 112.7(f) would likely meet the requirements of this section.

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[33] Training objectives are specifically spelled out by federal regulations (USCG, EPA, USDOT) for many regulated operations. The working assumption will be that federal training objectives will be sufficient to meet the intent of this requirement.

[34] "retrievable form" would include paper files, DVD-ROM, CD-ROM, archival computer backup tapes, or other form of archival, non-volatile computer data storage format, not including floppy disks or other non-permanent data storage medium.

[35] "Statewide Summary of Oil & Hazardous Substance Spill Data", November 2003, ADEC.

We have attempted to clarify who would be required to be trained by revising the requirement to be task-based. The department believes that the level of training would vary greatly among the regulated operators and is most effectively determined by the operator on an individual basis.

ADEC is proposing paragraph (b) as minimum training program standards. We note that there are many different types of operations of widely varying size regulated by this section and that accurately specifying a training program that would be appropriate for all regulated operators is an exercise in futility. The regulated operators themselves are in the best position to design an effective and efficient training program to meet their specific conditions. Other federal and state regulations also address training, and portions of the programs required by 33 CFR Part 154 or 49 CFR Part 195 may be applicable to this proposed requirement.

The department is including a general provision that documentation of compliance with the provisions of Article 1 is available to the department as a means of verifying compliance.

We are proposing the inclusion of shipboard records and computerized databases as a means of verifying compliance, although noting that the proposed paragraph 18 AAC 75.020(e) requires that the computer records be in a permanent form, such as CD-ROM or archival computer backup tape.

The department notes that the current requirement of 18 AAC 75.007(g), carried over to the potential new regulation 18 AAC 75.020(d), requires a history of all spills in Alaska over 55 gallons, not all spills nation- or worldwide. We are including a provision that copies of spill reports are available to the department as a means of verifying compliance with this requirement.

The department is including a general provision that records documenting compliance with the provisions of Article 1 be maintained in a retrievable form for verification for a default period of five years, corresponding to the c-plan approval period, unless specified otherwise.

18 AAC 75.025. Transfer requirements

18 AAC 75.025(b) is amended to read:

(b) Unless it is technically unfeasible **or unsafe**[36] to do so, an oil containment boom appropriate for local conditions must be deployed in an effective manner around an oil tank vessel or barge during the transfer of

(1) crude oil,

(2) persistent petroleum products, and

(3) oily ballast water.

[CRUDE OIL AND OTHER PERSISTENT PRODUCTS.]

[36] This is to ensure that personnel safety is an overriding factor in determining whether or not to boom

18 AAC 75.025(g) is amended to read:

(g) The lowermost drain and all outlets of any tank car or tank truck must be **visually**[37] examined for leakage before filling and before departure. All tank car or tank truck manifolds must be blank flanged or capped, and valves must be secured before leaving the transfer area.

18 AAC 75.025 is amended by adding new subsections to read:

(h) All aboveground transfer piping that is used to transfer oil to or from docks or vessels must be visually checked before and during each transfer or monthly, whichever is less frequent. [38]

(i) For purposes of this section, "transfer" means any movement of oil within an oil terminal facility or between an oil terminal facility and a railroad tank car, tank truck, oil tank vessel, or oil barge by means of pumping, gravity, or displacement. [39]

(Eff. 5/14/92, Register 122; am 10/28/2000, Register 156; am 12/14/2002, Register 164; am__/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

AS 46.04.055

Rationale & Discussion

ADEC is proposing expanding the requirement for pre-booming to include oily ballast water. We are also proposing additional wording to clarify the regulatory intent of the requirement.

In developing the proposed changes, ADEC compared requests for additional regulations requiring preventative booming to similar regulations in other states (see Table 1, below).

Table 1 Selected State Pre-Booming Requirements

State	Vessels Affected	Products Pre-Boomed
Alaska	Tank barges and tank vessels unless technically infeasible	Crude and persistent oils.
California - Two Agencies State Lands Commission (SLC) Office of Spill Prevention and Response (OSPR) 4 foot stand-off*	All tank barges and tank vessels at "marine terminals". Non-tank vessels over 250 barrels. High velocity >1.5 knots can opt out but must be able to boom in 30 minutes. All vessels engaged in oil transfers except marine terminal transfers and non-tank vessels under 250 barrel capacity	All persistent oils. Persistent and grades #1 and #2 oils.
Connecticut Stand-off is sufficient to catch and contain oil	Tank ship and barges vessels except when unsafe.	All oil or petroleum liquids.

[37] Clarification of the type of examination required
[38] Moved verbatim from current 75.080(d)
[39] To clarify that internal fuel transfers onboard vessels are not regulated by this section

State	Vessels Affected	Products Pre-Boomed
Florida Facility must provide boom. Stand-off to collect as much as possible	Vessels that can hold more than 10,000 gallons heavy oil.	All heavy oils regardless of purpose.
Maine 50 foot stand-off	Tank vessels and barges.	All oils except those transferred for fuel.
New Jersey Uses facility applicability to require protective booming. 15 foot stand-off	All facilities subject to Coast Guard regulations and vessels transferring to other vessels at that facility.	All cargo, waste oils, and hazardous substances. No oils used as fuel, lubricant, flash point in excess of 100deg F.
Washington Department of Ecology is developing proposed rules for pre-booming	Proposed rules will cover transfers to commercial vessels from fixed and mobile facilities	Proposed rules will cover all oils, but pre-booming would be dependent upon environmental and facility factors
** Stand off refers to the distance away from the hull of the vessel the boom must be affixed in order to ensure effective containment.*		

ADEC believes that the additional cost, wear and tear on equipment, and time required for pre-booming around non-persistent products provides little net benefit compared to the current requirements. ADEC notes that the Washington State Department of Ecology is considering pre-booming rules, and they anticipate an additional cost to industry of $1,000 - $3,000 per transfer.[40]

ADEC is also proposing a wording change to clarify the requirement of 18 AAC 75.025(g), movement of the text of 18 AAC 75.080(d) to 18 AAC 75.025(h), and the addition of a definition in 18 AAC 75.025(i) to clarify that transfers covered by this section do not include internal fuel transfers aboard vessels.

18 AAC 75.027. Requirements for laden oil tank vessels

18 AAC 75.027(a) is amended to read:

(a) In addition to the applicable requirements of 18 AAC 75.007 - 18 AAC 75.025, a laden oil tank vessel must carry or have ready access to sufficient oil transfer equipment to facilitate lightering to and from other vessels. **The oil transfer equipment[41] must be sufficient to lighter the volume of the largest cargo tank within 24 hours.**[42]

18 AAC 75.027(d) is amended to read:

(d) The owner or operator shall ensure that measures are in place that allow the prompt detection of an oil discharge including measures such as visual lookouts, the sounding of all

[40] Based upon Department of Ecology information, booming a transfer operation costs in the range of $1,000 - $3,000 per transfer, depending upon location and assuming 2,000 feet of boom. Oil and Fuel Transfer Over Waters of the State of Washington – A Report to the Legislature, Washington State Department of Ecology, Olympia WA, publication 05-08-005

[41] "oil transfer equipment" is intended to include pumps, hoses, connectors, fenders, line, and all ancillary equipment required to perform the transfer

[42] This is intended to be a performance standard to determine what is "sufficient oil transfer equipment"

cargo tanks to check cargo and water levels in the tanks after an intentional or unintentional grounding**, collision, or allision**[43], and, where technically feasible, electronic leak detection systems. (Eff. 5/14/92, Register 122, am__/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Rationale & Discussion

ADEC is proposing to add text to 18 AAC 75.027(a) to provide a clear performance standard that must be met for compliance with the regulation. We are also proposing additional wording to clarify 18 AAC 75.027(d).

18 AAC 75.037. Requirements for laden oil barges

18 AAC 75.037(a) is amended to read:

(a) In addition to the applicable requirements of 18 AAC 75.007 - 18 AAC 75.025, a laden oil barge must carry or have ready access to sufficient oil transfer equipment to facilitate lightering to and from other vessels. **The oil transfer equipment must be sufficient to lighter the volume of the largest cargo tank within 24 hours.** [44]

18 AAC 75.037(d) is amended to read:

(d) The owner or operator shall ensure that measures are in place that allow the prompt detection of an oil discharge, including visual inspections of the barge and the area around the barge, and the sounding of all cargo tanks to check cargo and water levels in the tanks after an intentional or unintentional grounding**, collision, or allision**.[45] (Eff. 5/14/92, Register 122; am__/__/____, Register____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Rationale & Discussion

ADEC is proposing to add text to 18 AAC 75.037(a) to provide a clear performance standard that must be met for compliance with the regulation. We are also proposing additional wording to clarify 18 AAC 75.037(d).

18 AAC 75.045. Operating requirements for exploration and production facilities

18 AAC 75.045(b) is amended to read:

(b) In state waters, a **marine structure used for drilling**[46] [PREFABRICATED OFFSHORE PLATFORM THAT IS TOWED INTO PLACE AND BEGINS OPERATIONS AFTER THE EFFECTIVE DATE OF THIS SECTION] must be inspected for fatigue and

[43] "allision" is defined in Article 9
[44] This is intended to be a performance standard to determine what is "sufficient oil transfer equipment"
[45] "allision" is defined in 18 AAC 75 Article 9
[46] "marine structure" is defined in 18 AAC 75 Article 9

structural integrity as required by 30 C.F.R. 250, Subpart I, as amended through **July 1, 2001** [July 1, 1991], the provisions of which are adopted by reference. The inspection must be conducted after [PLATFORM] installation **of the structure** and before drilling or production operations begin. The owner or operator shall submit to [THE SUPERVISOR OF THE APPROPRIATE REGIONAL OFFICE OF] the department a report of the inspection results and any corrective actions taken.

18 AAC 75.045(c) is amended to read:

(c) Closure valves for pipelines leaving **marine structures** [THE PLATFORM] must be located at a protected location that isolates the pipeline from the **structure** [PLATFORM] if a discharge or other emergency occurs and must function both manually and remotely as part of an emergency shutdown system.

18 AAC 75.045(d) is amended to read:

(d) The owner or operator of an exploration or production facility shall provide, at a minimum,

(1) containment and collection devices such as drip pans and curbs for offshore [DRILLING] **exploration and production wells;** [47]

(2) wellhead sumps for [ONSHORE DRILLING] **exploration and production wells located onshore or on artificial islands or ice islands; and**

(3) for exploration and production wells drilled and completed[48] after July 1, 2008 located onshore or on artificial islands or ice islands, wellhead sumps shall be designed and installed to be sufficiently impermeable. [49]

18 AAC 75.045(e)-(g) are amended to read:

(e) **A marine structure, other than an artificial island[50], used for oil** [AN OFFSHORE] production [PLATFORM, INCLUDING A MOBILE OFFSHORE DRILLING UNIT,] must have a sufficiently impermeable deck with catch tanks or other devices adequate to contain, collect, and divert spilled oil. The catch tank must have adequate storage capacity to contain anticipated and accidental discharges of oil and high-liquid-level alarms that will immediately notify the operator if a high liquid level develops.

(f) Oil storage tanks, including bulk fuel tanks, must meet the applicable requirements of 18 AAC 75.065**, 18 AAC 75.066[51],** and 18 AAC 75.075.

[47] terminology change for consistency
[48] "completed" means a well that is equipped and in condition so that it is capable of producing or injecting fluids, as described in AOGCC regulations at 20 AAC 25.990(14)
[49] "sufficiently impermeable" is defined in Article 9
[50] Added to clarify that this requirement does not apply to artificial islands
[51] Technical change to include proposed new section on shop-fabricated aboveground tanks

(g) Piping associated with an exploration or production facility must meet the applicable requirements of 18 AAC 75.080 **and 18 AAC 75.047**. (Eff. 5/14/92, Register 122, am __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Rationale & Discussion

The current regulations for offshore exploration and production facilities (18 AAC 75.045) were originally developed for Cook Inlet and do not adequately address offshore facilities on the North Slope, particularly offshore ice and gravel islands and temporary bottom-founded drill structures. ADEC is proposing several revisions to this section to properly include North Slope offshore operations. We have revised the language to include "marine structure used for drilling", proposed a definition of "marine structure" (incorporated in Article 9), and incorporated by reference the latest edition of 30 CFR 250, Subchapter I.

ADEC is proposing adding a new requirement that wellhead sumps be designed and installed as sufficiently impermeable, as defined in 18 AAC 75.990(124). To retrofit the existing wellhead sumps is impractical, but to design future wellhead sumps to meet the impermeability standard is well within the capability of today's technology.

18 AAC 75.047. Requirements for flow lines at production facilities

18 AAC is amended by adding a new section to read:

18 AAC 75.047. Requirements for flow lines at production facilities (a) Applicability. Unless indicated otherwise within this section, all flow lines associated with a production facility must meet the requirements of this section by July 1, 2007.[52]

(b) Design and construction standards. Unless a more stringent requirement is set forth in this section, the owner or operator shall ensure that the following procedures, codes, and standards, the provisions of which are adopted by reference, are used for flow lines initially placed in service after July 1, 2008:

(1) American Society of Mechanical Engineers (ASME) B31.4, *Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquid*s, 2002 Edition,

(2) ASME B31.8 *Gas Transmission and Distribution Piping Systems,* 2003 Edition, or

(3) another appropriate nationally-recognized standard approved by the department.

[52] AS 46.04.900(20) "production facility" means a drilling rig, drill site, flow station, gathering center, pump station, storage tank, well, and related appurtenances on other facilities to produce, gather, clean, dehydrate, condition, or store crude oil and associated hydrocarbons in or on the water of the state or on land in the state, and gathering and flow lines used to transport crude oil and associated hydrocarbons to the inlet of a pipeline system for delivery to a marine facility, refinery, or other production facility;

(c) Operations and maintenance. The owner or operator shall ensure that the following procedures, codes, and standards, the provisions of which are adopted by reference, are used for the operations and maintenance of flow lines:

(1) corrosion control; flow lines shall be included in a corrosion monitoring and control program consistent with ASME B31.4, *Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquid*s, 2002 Edition, Chapter VIII, that includes, at a minimum, the following items:

(A) external corrosion control of buried or submerged flow lines shall be consistent with National Association of Corrosion Engineers (NACE) International, *Standard Recommended Practice-Control of External Corrosion on Underground or Submerged Metallic Piping System*s, 2002, RP0169-2002, unless a more stringent requirement is set out in this section;

(B) external corrosion control of aboveground flow lines. 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, aboveground flow lines shall be protected from external corrosion

(i) by the application of a protective coating,

(ii) by the use of corrosion-resistant alloys, or

(iii) by another method approved by the department.

(C) internal corrosion control; Operators shall institute programs designed to minimize internal corrosion, including, as appropriate, one or more of the following:

(i) removal of foreign material by scraping or pigging;

(ii) treatment of residual water or dehydration;

(iii) injection of inhibitors, biocides, or other chemical agents;

(iv) removal of dissolved gases by chemical or mechanical means;

(v) gas blanketing;

(vi) continuous internal coating or lining; or

(vii) another method approved by the department;

(2) preventative Maintenance and Leak Detection; flow lines shall

(A) be included in a preventative maintenance program which meets the requirements of (d), or

(B) be provided with a leak detection system which meet the requirements of (e).

(d) Preventative Maintenance Program. Operators may meet the requirements of (c)(2) by having in place a preventative maintenance program that ensures the continued operational reliability of any flow line system component affecting quality, safety, and pollution prevention.

For a preventative maintenance program, the owner or operator shall ensure that the following procedures, codes, and standards, the provisions of which are adopted by reference, are used:

(1) for submerged flow lines, inspection and maintenance consistent with ASME B31.4, *Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquid*s, 2002 Edition, Chapters VII through IX;

(2) for buried flow lines, inspection and maintenance consistent with ASME B31.4, *Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquid*s, 2002 Edition, Chapters VII and VIII;

(3) for aboveground flow lines

(A) an inspection program consistent with the requirements of American Petroleum Institute (API) *Piping Inspection Code, Inspection, Repair, Alteration, and Rerating of In-service Piping Systems*, API 570, Second Edition, October 1998, Addendum 1, February 2000, Addendum 2, December 2001, and Addendum 3, August 2003, and

(B) a maintenance program consistent with ASME B31.4, *Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquid*s, 2002 Edition, Chapters VII and VIII;

(4) procedures to review proposed changes in operations to evaluate potential impacts on pipe integrity; and

(5) documentation to validate the effectiveness of the preventative maintenance program, including

(A) the procedures for carrying out the program in conformance with API 570, Second Edition, October 1998, Addendum 1, February 2000, Addendum 2, December 2001, and Addendum 3, August 2003 or ASME B31.4, 2002 Edition, as appropriate;

(B) dates of inspections and tests;

(C) inspections and test data evaluation including analysis, pipewall thickness measurements and remaining life calculations;

(D) internal audit procedures of the program, including descriptions of controls and corrections for non-conformities.

(e) Leak Detection. Operators may meet the requirements of (c)(2) by completely containing the entire circumference of the flow line and providing the interstitial space with a leak detection system approved by the department.

(f) Line Markers. Line markers shall be installed no later than July 1, 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.-[53]

(g) Flow lines removed from service for more than one year and not maintained in accordance with 18 AAC 75.047(c) must be free of accumulated oil and isolated from the

[53] The intention is that flow lines be sufficiently identified for safety consistent with ASME B31.4, Chapter VII, section 451.3

system. The owner or operator shall notify the department when flow lines are removed from service in accordance with this paragraph.[54]

(h) Aboveground flow lines must be supported consistent with the requirements of ASME B31.4, *Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquid*s, 2002 Edition, Chapter II, Part 5, Subsection 421, adopted by reference. (Eff.__/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Editor's Note: 1. The publications adopted by reference in 18 AAC 75.047 may be reviewed at the department's offices in Anchorage, Fairbanks or Juneau, or may be obtained directly from the appropriate publisher. The mailing address, telephone number, facsimile number, and website, if available, for each publisher are as follows:

American Society of Mechanical Engineers (ASME), 22 Law Drive, P.O. Box 2300, Fairfield, New Jersey 07007-2300; phone (800) 843-2763; fax (201) 882-1717; website: http://www.asme.org/;

National Association of Corrosion Engineers (NACE) International, 1440 South Creek Drive, Houston, Texas 77084-4906; phone (800) 797-6223; fax (281) 228-6300; website: http://www.nace.org;

American Petroleum Institute (API), 1220 L Street NW, Washington, DC 20005-4070; phone (202) 682-8000; fax (303) 397-2740; website: http://www.api-ec.api.org

Rationale & Discussion

The introduction portion of this document provides background rationale for developing this section.

Based upon a review of spill data and federal, state, and other national regulations, ADEC is proposed draft regulations covering the following areas:

- Minimum design & construction standards – including protective standards for design and construction based upon industry consensus standards;
- Minimum operation & maintenance standards - Including performance-based corrosion control and discharge prevention standards, which may be best accomplished through a program similar to the federal integrity management regulations already in place for federally regulated gathering lines and other pipelines regulated under 49 CFR 195;[55] and
- Compliance verification & documentation requirements – Some form of verifiability that operators are meeting the standards.

The following table provides a capsule discussion of the individual proposed regulations.

[54] "free of accumulated oil" means that there are no pools of liquid oil left in the pipeline. This state can be accomplished, for example, by pigging the line. "isolated from the system" is intended to mean blind-flanging, physical disconnection, locked leak-proof valves, or other forms of isolation that effectively prevent oil from entering the line.

[55] A starting point for this item could be API 1160 – Managing System Integrity for Hazardous Liquid Pipelines.

Table 2, Description of 18 AAC 75.047

Proposed Regulation	Discussion
18 AAC 75.047(a)	An applicability subsection to clearly delineate what piping is covered by the proposed new section.
18 AAC 75.047(b)	ADEC is proposing an industry consensus standard series, ASME B31.4/B31.8, for baseline design and construction of flow lines. The phrasing "or another appropriate nationally-recognized standard approved by the department" is intended to cover rare, specific conditions not covered by ASME B31.4, and is not intended as an alternative to the ASME standard.
18 AAC 75.047(c)	A review of historical flow line spill data clearly indicates that corrosion is the major contributing factor in spills. Therefore, ADEC is proposing minimum corrosion control program standards in an effort to reduce the frequency and severity of flow line spills. ADEC is also proposing two spill prevention options in addition to a corrosion control program. Operators would have the option of including flow lines in a preventative maintenance program designed to ensure continued operational reliability and safety, or provide a leak detection system for the lines.
18 AAC 75.047(d)	ADEC is proposing a preventative maintenance program as one option for reducing spills from flow lines. The intention of the department is that the preventative maintenance program would be a comprehensive program consistent with the API 570 piping standard.
18 AAC 75.047(e)	As an alternative to a preventative maintenance program, ADEC is proposing the option of a leak detection system.
18 AAC 75.047(f)	For purposes of safety, ADEC is proposing line markers for flow lines, particularly for buried lines. ADEC notes that the proposed wording is consistent with industry practice and ASME B31.4.
18 AAC 75.047(g)	To reduce the frequency and severity of spills from out of service flow lines, ADEC is proposing that lines removed from service be free of oil and isolated from the system.
18 AAC 75.047(h)	ADEC is specifying ASME B31.4 for proper support of flow lines.

The following diagram graphically illustrates how ADEC perceives the division between crude oil transmission pipelines, facility oil piping, and flow lines.

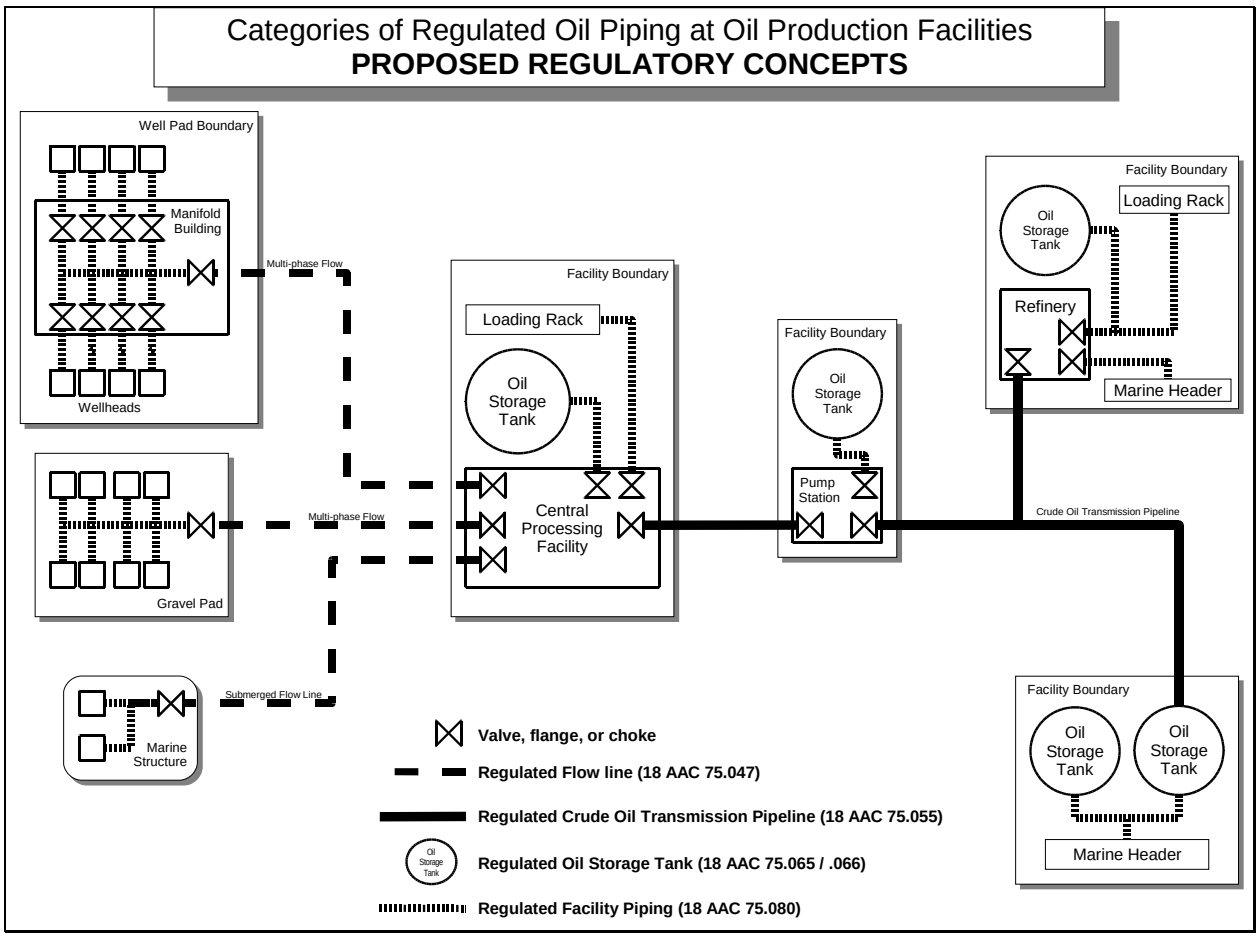

Figure 2, Regulatory Classes of Piping

18 AAC 75.055. Leak detection, monitoring, and operating requirements for crude oil transmission pipelines

18 AAC 75.055(c) and (d) are amended to read:

(c) If oil storage tanks are present at the crude oil transmission pipeline facility, the owner or operator shall meet the requirements of 18 AAC 75.065**, 18 AAC 75.066,**[56] and 18 AAC 75.075.

(d) For piping connected to or associated with the main crude oil transmission pipeline the owner or operator shall meet the **applicable**[57] requirements of 18 AAC 75.080 **and 18 AAC 75.047**.

18 AAC 75.055 is amended by adding new subsections to read:

(e) The owner or operator of a crude oil transmission pipeline employing a computational pipeline monitoring (CPM) system for leak detection shall install, test, inspect and maintain the CPM system in accordance with recommended practices and schedules in API Publication 1130, Second Edition, November 2002, *Computational Pipeline Monitoring for Liquid Pipelines*, adopted by reference, including, at a minimum:

(1) initial system testing to verify design performance and establish baseline for interval testing;

(2) testing every five years or more frequently following significant changes to the CPM application or to the crude oil transmission pipeline configuration to confirm system effectiveness; and

(3) incorporation of CPM training into the operator's prevention training program required under 18 AAC 75.020(a).

(f) Documentation and record-keeping. The owner or operator of the crude oil transmission pipeline shall maintain testing and inspection records related to the leak detection system as recommended in API Publication 1130, Second Edition, November 2002, *Computational Pipeline Monitoring for Liquid Pipelines*, adopted by reference, including at a minimum:

(1) documentation of the test purpose, test parameters, and methodology for the initial system tests and for re-tests;

(2) maintain detailed records for three test intervals in accordance with API 1130, Second Edition, November 2002, Section 6.2.6, adopted by reference, including analysis of the results of the tests and any recommended modifications and corrective actions taken as a result of testing;

[56] To include proposed new section for shop-fabricated tanks
[57] Added for clarity

(3) documentation of leak detection system operation during any actual crude oil leak for the life of the leak detection system; and

(4) copies of records and documentation required by this paragraph shall be provided to the department upon request.

(g) For purposes of this section, "daily throughput" means the average volume amount of crude oil flowing through a crude oil transmission pipeline segment during the previous calendar year divided by the number of days in that year. (Eff. 5/14/92, Register 122, am __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Editor's Note: The publications adopted by reference in 18 AAC 75.055 may be reviewed at the department's offices in Anchorage, Fairbanks, or Juneau, or may be obtained directly from the appropriate publisher. The mailing address, telephone number, facsimile number, and website, if available, for each publisher are as follows:

American Petroleum Institute (API), 1220 L Street NW, Washington, DC 20005-4070; phone (202) 682-8000; fax (303) 397-2740; website: http://www.api-ec.api.org

Rationale & Discussion

ADEC had many informative discussions with pipeline operators on the subject of pipeline leak detection and the potential for a more restrictive leak detection standard. Many operators felt that going to a lower detection limit (0.5% of daily throughput was initially proposed) was an exponential increase that was not practically possible. Pipeline operators hold that each pipeline has unique operating and physical characteristics which dictate the effective best achievable leak detection limit. Pushing the leak detection limit lower will necessarily induce a reduction in confidence in the system due to increased number of false alarms. Too many false alarms could actually reduce the effectiveness of the prevention measure because real spills would become lost in the noise.[58]

An accurate synopsis of the performance of a leak detection system would include detection threshold, detection time, and a confidence factor in the detection.

Upon further review of the issue, ADEC agrees, and is proposing no change to the leak detection standard for crude oil transmission pipelines. We note, however, that leak detection systems developed to meet 18 AAC 75.055(a) are subject to the Best Available Technology (BAT) requirements of 18 AAC 75.425(e)(4)(A)(iv) which may indicate a lower leak detection limit, dependent upon the unique operating and physical characteristics of each pipeline.

Leak detection technology has greatly improved since 18 AAC 75.055 became effective in 1992. In particular, Computational Pipeline Monitoring (CPM) systems have become capable of detecting smaller leaks over time due to enhancements in both software and support systems. Several CPM systems were highlighted at ADEC's 2004 Best Available Technology (BAT) Conference. Therefore ADEC has included CPM in our discussion draft in proposed new

[58] For additional analysis in support of a 1% leak detection limit, see "Hazardous Liquid Leak Detection Techniques and Processes" USDOT RSPA Report No. DTRS56-02-D-70037-01

sections 18 AAC 75.055(e) through (f). The current industry standard for installing, maintaining, and operating computational pipeline monitoring (CPM) leak detection systems is found in API Publication 1130, Second Edition, November 2002, Computational Pipeline Monitoring for Liquid Pipelines, which ADEC intends to adopt. However, because API 1130 is referenced by U. S. DOT in 49 CFR 195 and because it should be applied according to the needs of each individual pipeline, ADEC has extracted minimum requirements from API 1130 for each regulated pipeline. These requirements are found in 18 AAC 75.055(e) and (f) and establish minimum standards for initial system testing, regular interval testing, incorporation of CPM training into the operator's overall prevention training program, and minimal standards for documentation and record keeping. It is not ADEC's intention to duplicate 49 CFR 195 by establishing these standards; rather ADEC intends to establish overall requirements for a crude oil transmission pipeline owner/operator to adhere to the standards in API 1130 while minimizing the need for interpretation for basic elements of the standard.

A survey of state, federal, and provincial pipeline leak detection regulations is shown below for comparison purposes between Alaska and other states, provinces, and federal requirements.

Table 3 Selected State, Federal, & Provincial Pipeline Leak Detection Standards

Alaska
18 AAC 75.055(a) (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; and (3) for a remote pipeline not otherwise directly accessible, weekly aerial surveillance, unless precluded by safety or weather conditions.
California
Title 2, Article 5.5, Para. 2569 (a) Operators may meet the requirements of providing a leak detection system or systems by any of the following: (1) Instrumentation with the capability of detecting a transfer pipeline leak equal to two percent (2%) of the maximum design flow rate within five minutes; (2) Completely containing the entire circumference of the pipeline provided that a leak can be detected within fifteen minutes; Note: Applies to marine terminal pipelines only
Washington
WAC 173-180A-100 (8) Facilities shall have the capability of detecting a transfer pipeline leak equal to eight percent of the maximum design flow rate within fifteen minutes for transfer pipelines connected to tank vessels. Leak detection capability shall be determined by the facility using best engineering judgment. Deficiencies with leak detection systems such as false alarms must be addressed and accounted for by the facility. Facilities may meet these requirements by: (a) Visual inspection provided the entire pipeline is visible and inspected every fifteen minutes; or (b) Instrumentation; or (c) Completely containing the entire circumference of the pipeline provided that a leak can be detected within fifteen minutes; or (d) Conducting an acceptable hydrotest of the pipeline immediately before the oil transfer with visual surveillance of the exposed pipeline every fifteen minutes; or (e) A combination of the above strategies; or (f) A method approved by the department which meets the standard identified in this section. Leak detection system operation and operator response must be described in the facility operations manual. Note: "Transfer pipeline" is a buried or aboveground pipeline used to carry oil between a tank vessel or transmission pipeline and the first valve inside secondary containment at the facility. A transfer pipeline does not

include process pipelines, pipelines carrying ballast or bilge water, transmission pipelines, tank vessel or storage tanks.

WAC 480-75-300
(1) Companies must rapidly locate leaks from their pipeline. Companies must provide leak detection for under flow and no flow conditions.
(2) Leak detection systems must be capable of detecting an eight percent of maximum flow leak within fifteen minutes or less.
(3) Companies must have a leak detection procedure and a procedure for responding to alarms. The operator must maintain leak detection maintenance and alarm records.
Note: Applicable to transmission pipelines.

U.S. Department of Transportation (USDOT)

49 CFR 195.134
This section applies to each hazardous liquid pipeline transporting liquid in single phase (without gas in the liquid). On such systems, each new computational pipeline monitoring (CPM) leak detection system and each replaced component of an existing CPM system must comply with section 4.2 of API 1130 in its design and with any other design criteria addressed in API 1130 for components of the CPM leak detection system.

49 CFR 195.444
Each computational pipeline monitoring (CPM) leak detection system installed on a hazardous liquid pipeline transporting liquid in single phase (without gas in the liquid) must comply with API 1130 in operating, maintaining, testing, record keeping, and dispatcher training of the system.

49 CFR 195.452(i)(3)
(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.
Note: Additionally, 49 CFR 195.444 requires that computational pipeline monitoring (CPM), if used, must comply with API standard 1130.

Canadian National Energy Board

Onshore Pipeline Regulations, 1999
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;
(b) records historical pipeline operation data, messages and alarms for recall; and
(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.
Note: CSA Z662 does not mandate a specific leak detection level, but provides guidance similar to API 1130. CSA Z662 Appendix E gives minimum sampling rates, which are generally indicative of detection time.

Nova Scotia

Pipeline Regulations, N.S. Reg. 66/98
40. Pipeline control system
(1) A company shall have a pipeline control system that comprises the facilities and procedures used to control and monitor the operations of the pipeline.
(2) The pipeline control system referred to in subsection (1) shall
(a) record historical pipeline operations data, messages, and alarms for recall; and
(b) include a leak detection system that for oil pipelines that meets the requirements of CSA Z662, reflecting the level of complexity of the pipeline, the pipeline operations, and the products transported.

Saskatchewan

Pipelines Regulations, 2000, R.R.S. c. P-12.1 Reg. 1
(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.

18 AAC 75.065. Aboveground field-constructed oil storage tank requirements

18 AAC 75.065(a) is amended to read:

18 AAC 75.065. Aboveground field-constructed oil storage tank requirements (a) The owner or operator of an oil terminal, crude oil pipeline, exploration, or production facility shall maintain and inspect **aboveground field-constructed**[59] oil storage and surge tanks consistent with the requirements of API Standard 653, ***Tank Inspection, Repair, Alteration, and Reconstruction*, Third** [FIRST] Edition, **December 2001, and Addendum 1, September 2003** [1991, AND SUPPLEMENT 1, JANUARY 1992], adopted by reference, or API Recommended Practice 12R1, ***Recommended Practice for Setting, Maintenance, Inspection, Operation and Repair of Tanks in Production Service*, Fifth** [FOURTH] Edition, **August 1997** [1991] adopted by reference, as appropriate, unless a more stringent requirement is set out in this section. **Inspection intervals for aboveground oil storage and surge tanks**

(1) may, at the discretion of the department, be reduced

(A) for aboveground oil storage tanks older than 30 years;

(B) for riveted or bolted aboveground oil storage tanks;

(C) for aboveground oil storage tanks with demonstrated structural, corrosion, or foundation problems; or [60]

(D) after a significant seismic event;

(2) shall not be based upon similar service as specified in Section 6.4.2 of API Standard 653, Third Edition, December 2001, and Addendum 1, September 2003, adopted by reference;

(3) based upon risk-based inspection as specified in Section 6.4.3 of API Standard 653, Third Edition, December 2001, and Addendum 1, September 2003, adopted by reference, shall be submitted to the department for approval and must include

(A) a quantitative risk assessment conducted in accordance with American Petroleum Institute (API) Recommended Practice 580, *Risk-Based Inspection*, First Edition, May 2002, adopted by reference, and signed by a registered engineer; and

(B) an inspection schedule with inspection intervals not to exceed 30 years.

[59] "aboveground" was added to clarify what tanks are covered by this section and to differentiate from the underground storage tank requirements of 18 AAC 78

[60] "structural" problems would be those identified by an API 653 or similar inspection as significant

18 AAC 75.065(b) is repealed:

(b) **Repealed**. __/__/____.

[THE OWNER OR OPERATOR SHALL INSPECT OIL STORAGE TANKS FOR STRUCTURAL INTEGRITY AT LEAST EVERY TEN YEARS UNLESS A SHORTER OR LONGER INSPECTION INTERVAL IS PRESCRIBED BY API STANDARD 653 , FIRST EDITION, 1991, AND SUPPLEMENT 1, JANUARY 1992, OR API RP 12R1, FOURTH EDITION, 1991. THE DEPARTMENT WILL, IN ITS DISCRETION, REQUIRE A MORE FREQUENT SCHEDULE

(1) FOR TANKS OLDER THAN 30 YEARS;

(2) FOR RIVETED OR BOLTED TANKS;

(3) FOR TANKS WITH DEMONSTRATED CORROSION OR FOUNDATION PROBLEMS; OR

(4) AFTER A SIGNIFICANT SEISMIC EVENT.]

18 AAC 75.065(c) is amended to read:

(c) An **onshore**[61] elevated [OR A PORTABLE[62]] **aboveground oil storage** tank **whose configuration allows external inspection of more than 50% of the tank bottom**[63] is not required to undergo an internal inspection if an external integrity inspection, performed in accordance with API Standard 653, **Third** [FIRST] Edition, **December 2001** [1991], and **Addendum 1, September 2003 [**SUPPLEMENT 1, JANUARY 1992] adopted by reference, or API RP 12R1, **Fifth Edition, August 1997 [**FOURTH EDITION, 1991] adopted by reference, is substituted and that inspection includes **an** [A THOROUGH] inspection and a nondestructive integrity test of the **aboveground oil storage** tank, including the tank bottom.

[61] "onshore" added to exempt tanks constructed as integral structural members of offshore platforms

[62] Portable (shop-fabricated) oil storage tanks are moved to new section 18 AAC 75.066.

[63] This language was initially suggested as a way to handle elevated tanks in mounted on grids in permafrost areas.

18 AAC 75.065(d) is amended to read:

(d) **Records and documentation required by this section shall be maintained [**A RECORD OF INSPECTION RESULTS AND CORRECTIVE ACTIONS TAKEN AFTER 5/14/92 MUST BE KEPT] for the service life of the **aboveground oil storage** tank and must be **provided** [AVAILABLE] to the department for inspection and copying upon request **with the exception of inspections required as specified in API 653, Subsection 6.3.1, Third Edition, December 2001, and Addendum 1, September 2003, adopted by reference, which shall be maintained for five years.**[64]

18 AAC 75.065(e), (f) and (g) are amended to read:

(e) The owner or operator shall notify the department [IF AN OIL STORAGE TANK]

(1) as soon as practical before a field-constructed aboveground oil storage tank undergoes major repair or major alteration, as defined in API Standard 653, **Third** [FIRST] Edition, **December 2001** [1991], and **Addendum 1, September 2003, Section 12.3.1.2** [SUPPLEMENT 1, JANUARY 1992, SECTION 10.3.1.2]**, adopted by reference**; **and**[65]

(2) before a field-constructed aboveground oil storage tank is returned to service.

(f) **Aboveground oil [**OIL] storage tanks served by internal steam heating systems must be designed to control leakage through defective heating coils. Condensate lines must be monitored, passed through an oil separating device, or passed through a retention system.

(g) [IF AN INTERNAL] **Internal** lining **systems** [SYSTEM IS] **installed after July 1, 2008 and** used to control corrosion or to meet the requirements of (i) of this section [,IT] must be installed in accordance with API **Recommended Practice 652, *Lining of Aboveground Petroleum Storage Tank Bottoms*, Third Edition, October 2005** [STANDARD 652, FIRST EDITION, 1991], **adopted by reference**.

18 AAC 75.065(h) and (i) are amended to read:

(h) **An** [A NEW] installation **placed in service between May 14, 1992 and July 1, 2008** must meet the following requirements:

(1) **aboveground oil storage**[66] tanks must be constructed and installed in compliance with API Standard 650,***Welded Steel Tanks for Oil Storage*,** 1988 edition, **adopted by reference,** API **Specification** [STANDARD] 12, D, ***Specification for Field***

[64] API 653, Subsection 6.3.1 reports are routine inspection reports, and maintaining them for the life of the tank provides no added value

[65] This is intended to allow some leeway in notification for emergency repairs. For normal scheduled major repair or alteration ADEC would expect advance notification and consultation sufficient to identify potential regulatory problems.

[66] Added for consistency.

Welded Tanks for Storage of Production Liquids, (Ninth Edition, 1989), **adopted by reference,** F**, *Specification for Shop Welded Tanks for Storage of Production Liquids*** (Tenth Edition, 1989)**, adopted by reference,** and P**, *Specification for Fiberglass Reinforced Tanks,*** (First Edition, 1986), **adopted by reference**, or another standard approved by the department;

(2) **aboveground** oil storage tanks may not be of riveted or bolted construction;

(3) cathodic protection or another approved corrosion control system must be installed**,** to protect the tank bottom from external corrosion where local soil conditions warrant; [AND]

(4) each **aboveground oil storage**[67] tank must be equipped with a leak detection system that an observer from outside the tank can use to detect leaks in the bottom of the tank, such as secondary catchment under the tank bottom with a leak detection sump, a sensitive gauging system, or other leak detection system approved by the department**; and [**.]

(5) after July 1, 2007, the operation and maintenance of the cathodic protection system must be consistent with Section 11 of National Association of Corrosion Engineers (NACE) International, *External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms*, RP0193-2001, adopted by reference, and the cathodic protection survey must be performed by a qualified/certified cathodic protection tester or corrosion expert.

(i) An [EXISTING] installation **placed in service before May 14, 1992** is subject to the following:

(1) each **aboveground oil storage**[68] tank must be equipped with **one or more of the following:**

(A) a leak detection system that an observer from outside the tank can use to detect leaks in the bottom of the tank, such as secondary catchment under the tank bottom with a leak detection sump, a sensitive gauging system, or another leak detection system approved by the department;

(B) cathodic protection in accordance with API **Recommended Practice**[69] [STANDARD] 651, ***Cathodic Protection of Aboveground Petroleum Storage Tanks,*** First Edition, 1991**, adopted by reference**;

(C) a thick film liner in accordance with API **Recommended Practice**[70] [STANDARD] 652, ***Lining of Aboveground Petroleum Storage Tank Bottoms***, First Edition, 1991**, adopted by reference**; or

[67] Added for consistency.
[68] Added for consistency.
[69] Technical correction.
[70] Technical correction.

(D) another leak detection or spill prevention system approved by the department; and

(2) Repealed. 5/26/2004;

(3) after July 1, 2007, the operation and maintenance of the cathodic protection system must be consistent with Section 11 of National Association of Corrosion Engineers (NACE) International, *External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms*, RP0193-2001, adopted by reference, and the cathodic protection survey must be performed by a qualified/certified cathodic protection tester or corrosion expert.

18 AAC 75.065(j) is amended to read:

(j) In addition to the applicable requirements of 18 AAC 75.025, the owner or operator shall ensure that one or more of the following means of preventing overfilling is provided:

(1) high liquid level alarms with signals that sound and display in a manner immediately recognizable by personnel conducting a transfer;

(2) high liquid level automatic pump shutoff devices set to stop flow at a predetermined tank content level;

(3) a means of immediately determining the liquid level of each bulk storage tank, provided that the liquid level is closely monitored during a transfer; or

(4) a system approved by the department which will immediately **notify** [NOTICE] the operator of high liquid levels.

18 AAC 75.065 is amended by adding new subsections to read:

(l) An installation placed in service after July 1, 2008 must meet the following requirements:

(1) aboveground oil storage tanks must be constructed and installed in compliance with

(A) API Standard 650, *Welded Steel Tanks for Oil Storage*, November 1998 Edition, Addendum 1, January 2000, adopted by reference, Addendum 2, November 2001, adopted by reference, Addendum 3, September 2003, adopted by reference;

(B) API Specification 12D, *Specification for Field Welded Tanks for Storage of Product Liquids*, Tenth Edition, November 1994, adopted by reference; or

(C) another standard approved by the department;

(2) oil storage tanks may not be of riveted or bolted construction;

(3) cathodic protection systems shall be in accordance with NACE Standard RP0193-2001, adopted by reference, or another approved corrosion control system and shall be installed to protect the tank bottom from external corrosion unless deemed not necessary by an evaluation conducted by a corrosion expert in accordance with API Recommended Practice 651, *Cathodic Protection of Aboveground Petroleum Storage Tanks*, Second Edition, December, 1997, Chapter 5, adopted by reference;

(4) cathodic protection systems shall be

(A) designed by a corrosion expert;

(B) installed under the supervision of a corrosion expert; and

(C) surveyed by a qualified/certified cathodic protection tester or corrosion expert; [71]

(5) each aboveground oil storage tank must be equipped with a leak detection system that an observer from outside the tank can use to detect leaks in the bottom of the tank in accordance with API 650, *Welded Steel Tanks for Oil Storage*, Appendix I, adopted by reference, or another leak detection system approved by the department;

(6) each aboveground oil storage tank shall be equipped with overfill prevention devices meeting the requirements of paragraphs (j)(1) and (j)(2).

(m) Cathodic protection systems installed after July 1, 2008 shall meet the applicable requirements of paragraph (l)(3)-(4) of this section. (Eff. 5/14/92, Register 122; am __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Editor's Note: The publications adopted by reference in 18 AAC 75. 065 may be reviewed at the department's offices in Anchorage, Fairbanks, or Juneau, or may be obtained directly from the appropriate publisher. The mailing address, telephone number, facsimile number, and website, if available, for each publisher are as follows:

American Petroleum Institute (API), 1220 L Street NW, Washington, DC 20005-4070; phone (202) 682-8000; fax (303) 397-2740; website: http://www.api-ec.api.org

National Association of Corrosion Engineers (NACE) International, 1440 South Creek Drive, Houston, Texas 77084-4906; phone (800) 797-6223; fax (281) 228-6300; website: http://www.nace.org;

[71] This refers to the annual corrosion survey required by the NACE standard. Bimonthly rectifier readings are done by facility personnel in accordance with NACE standard. The terms "corrosion expert" and "cathodic protection tester" are proposed definitions in 18 AAC 75.990.

Rationale & Discussion

The latest version of API 653 contains provisions for similar service and risk-based inspection (RBI) analysis to determine inspection intervals in Section 6.4. ADEC does not believe that the use of Section 6.4.3 offers a suitable regulatory framework for the application of RBI principles to the determination of internal inspection intervals, for the following reasons:

1) The provisions of 6.4.3 are not written in a manner which would make them suitable for use as a regulatory document. Many of the provisions are optional and non-binding; "should" and "can" are used where "shall" would be more appropriate.

2) No professional certification for personnel conducting RBI is required under 6.4.3. The only requirements are as follows: "It is essential that all RBI assessments be conducted by trained, qualified individuals knowledgeable in RBI methodology and knowledgeable and experienced in tank foundation design, construction, and corrosion." The lack of specific requirements makes this section effectively unenforceable. Note that RBI is not strictly defined in API 653, either in Section 6.4.3 or in Section 3 (Definitions).

3) Section 6.4.3 does not reference any industry standards or recommended practices relating to RBI methodology. Even API's own applicable publications are not mentioned, e. g. API RP 579, Fitness-For-Service Assessment, API RP 580, Risk-Based Inspection, and API Publication 581, Risk-Based Inspection Base Resource Document.

4) RBI is not mentioned anywhere in API Standard 653 except for Section 6.4.3. This short section thus stands alone, and as such is clearly inadequate for the implementation of a complex inspection regime like RBI.

Therefore, we are proposing excepting similar service and requiring a more rigorous determination of risk-based inspection intervals, based upon API RP 580 and an analysis by a registered engineer.

There has been much discussion regarding paragraph (b), ranging from changing (b)(1) from “older than 30 years” to “built before 19XX” to wholesale repeal of the provisions of the paragraph. In general, the department has determined that the discretion to apply a more stringent inspection schedule to specific tanks based upon specific factors is necessary. The regulation, as currently written, sets three cases of inspection interval:

(1) a default interval of 10 years for tanks that don’t meet cases (2) or (3),

(2) an interval determined by API Standard 653 or RP12R1 inspection criteria for tanks that are inspected under those inspection criteria, and

(3) an inspection interval of less than ten years, set by the department, for specific tanks that the department has deemed in its discretion to be at a higher risk of failure, such as older tanks, riveted or bolted tanks, tanks with demonstrated corrosion or foundation problems, or tanks that have been subjected to large earthquakes.

Because the issue of inspection intervals is closely tied to the issue of RBI, we propose repealing 18 AAC 75.065(b) and incorporating the language in (a) alongside the proposed RBI regulation.

18 AAC 75.066. Aboveground shop-fabricated oil storage tanks

18 AAC 75 is amended by adding a new section to read:

18 AAC 75.066. Aboveground shop-fabricated oil storage tanks (a) Applicability. All aboveground shop-fabricated oil storage tanks in service after July 1, 2008 shall meet the requirements of this section.

(b) Design and Construction. Unless a more stringent requirement is set out in this section, the owner or operator shall ensure that the following procedures, codes, and standards, the provisions of which are adopted by reference, are used for the design and construction of aboveground shop-fabricated oil storage tanks:

(1) Underwriters Laboratories (UL) Standard 142, *Steel Aboveground Tanks for Flammable and Combustible Liquids*, Eighth Edition, July 2002;

(2) American Petroleum Institute (API) Standard 650, *Welded Steel Tanks for Oil Storage*, November 1998 Edition, Addendum 1, January 2000, Addendum 2, November 2001, Addendum 3, September 2003, Appendix J;

(3) API Specification 12F, *Specification for Shop Welded Tanks for Storage of Production Liquids*, Eleventh Edition, November 1994;

(4) Steel Tank Institute (STI) F911-93, *Standard for Diked Aboveground Storage Tanks*;

(5) STI F921-03, *Standard for Aboveground Tanks with Integral Secondary Containment*;

(6) American Society of Mechanical Engineers (ASME) B96.1, *Welded Aluminum-Alloy Storage Tanks*, 1999 Edition;

(7) UL Standard 2085, *Protected Aboveground Tanks for Flammable and Combustible Liquids*, 1997 Edition; or

(8) another standard certified by a registered engineer and approved by the department. [72]

(c) Vaulted aboveground oil storage tanks shall [73]

(1) be designed and constructed consistent with a nationally recognized standard or by a registered professional engineer; [74]

[72] The intent is to allow the inclusion of other nationally recognized standards for certain special-service tanks that are not covered by the standards listed. An example would be shop-fabricated breakout tanks regulated under 49 CFR195.132(b). Such tanks are required to be built to API Specification 12F. It is not meant to allow operator specified standards for tanks whose service would normally fall under the umbrella of UL 142 or a similar nationally recognized standard.

[73] "Vaulted aboveground oil storage tank" is defined in Article 9.

(2) have discrete secondary containment vault systems constructed of seamless, poured and sealed or lined concrete, welded carbon or stainless metal, or other impermeable material as defined in 18 AAC 75.990(51) able to contain 100% of the volume of the tank plus any necessary allowance for precipitation; and

(3) have sufficient personnel access to allow full physical inspection of all sides of the tank.

(d) Self-diked aboveground oil storage tanks shall[75]

(1) be designed and constructed in accordance with a recognized national standard approved by the department;-[76]

(2) have access that allows visual inspection for corrosion control or damage to the outer shell of the storage tank and the inner surface of the integral secondary containment area to facilitate non-destructive testing in accordance with 18 AAC 75.066(c);

(3) have catchments that positively hold any fuel overflow due to tank overfill or divert it into the diked tank integral secondary containment area;

(4) be equipped with systems for freeing water or spilled fuel from the integral dike and for regular maintenance in accordance with 18 AAC 75.075(c) and (d);

(5) be equipped with integral dikes with leak detection in accordance with 18 AAC 75.075(h) for tanks placed in service after July 1, 2008 or 18 AAC 75.075(i) for tanks placed in service prior to that date; and

(e) Double-walled aboveground oil storage tanks shall[77]

(1) be designed and constructed in accordance with a recognized national standard approved by the department;-[78]

(2) be equipped with operating interstitial monitoring systems to detect oil leaks and water accumulation;

(3) be equipped with overfill protection in accordance with 18 AAC 75.066(e);

(4) be equipped with systems for freeing water or spilled fuel from the interstitial space and regular maintenance in accordance with 18 AAC 75.075(c); and

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[74] "Nationally recognized standard" would include UL 2245 for below grade vaults storing flammable liquids or NFPA 30A for flammable liquid storage at motor fuel dispensing stations. The "designed by a registered professional engineer" follows language in Uniform Fire Code, 2000 edition (7902.1.10).
[75] "Self-diked aboveground oil storage tank" is defined in Article 9.
[76] This would generally be UL 142, although other standards (such as STI F911) may be acceptable.
[77] "Double-walled aboveground oil storage tank" is defined in Article 9.
[78] "Nationally recognized standard" includes, by way of example, UL 2085, STI F921, or STI F941.

(f) Inspection. Unless a more stringent requirement is set forth in this section, the owner or operator of an oil terminal, crude oil pipeline, exploration, or production facility shall ensure that the following procedures, codes, and standards, the provisions of which are adopted by reference, are used for the maintenance and inspection of aboveground shop-fabricated oil storage tanks:

(1) Steel Tank Institute (STI) Standard SP001, *Standard for the Inspection of Aboveground Storage Tanks*, 3rd Edition, July 2005;

(2) API Standard 653, *Tank Inspection, Repair, Alteration, and Reconstruction*, Third Edition, December 2001, and Addendum 1, September 2003; or

(3) another equivalent inspection standard approved by the department.

(g) In addition to the applicable requirements of 18 AAC 75.025, aboveground shop-fabricated oil storage tanks placed in service after July 1, 2008 shall be equipped with

(1) one or more of the following means of preventing discharges:

(A) high liquid level alarms with signals that sound and display in a manner immediately recognizable by personnel conducting a transfer;

(B) high liquid level automatic pump shutoff devices set to stop flow at a predetermined tank content level;

(C) a means of immediately determining the liquid level of each bulk storage tank, provided that the liquid level is closely monitored during a transfer; or

(D) a system approved by the department which will immediately notify the operator of high liquid levels; and

(2) fixed overfill spill containment systems at each tank fill connection designed to prevent a discharge when a transfer hose or pipe is detached from the tank fill pipe.

(h) Discharge prevention devices must be tested before each transfer operation or monthly, whichever is less frequent. If monthly testing would necessitate interrupting the operation of a system subject to continuous flow, the owner or operator may substitute monthly inspection and annual testing for the monthly testing of overfill protection devices.
(Eff.__/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Editor's Note: The publications adopted by reference in 18 AAC 75.066 may be reviewed at the department's offices in Anchorage, Fairbanks, or Juneau, or may be obtained directly from the appropriate publisher. The mailing address, telephone number, facsimile number, and website, if available, for each publisher are as follows:

Underwriters Laboratories, Inc. (UL), Standards Department, 333 Pfingsten Road, Northbrook, Illinois 60062; phone (708) 272-8800; fax (708) 272-8129; website: http://www.ul.com

Steel Tank Institute (STI), 570 Oakwood Road, Lake Zurich, Illinois 60062; phone (708) 438-8265, extension 4331; fax (708) 438-8766; website: http://www.steeltank.com

American Petroleum Institute (API), 1220 L Street NW, Washington, DC 20005-4070; phone (202) 682-8000; fax (303) 397-2740; website: http://www.api-ec.api.org

Rationale & Discussion

Due to the potential confusion that would result from lumping disharmonious requirements specific to site-built and shop-fabricated oil storage tanks in the same section, a new section is proposed to deal solely with shop-fabricated aboveground oil storage tanks.

ADEC proposes to explicitly call out several acceptable standards which are applicable to various operations. In some cases federal regulation calls for a specific design and construction standard or specification for tanks in particular service, such as the requirement in 49 CFR 195.132(b) for shop-fabricated breakout tanks to be constructed to API Specification 12F.

We are also proposing specific design requirements for vaulted, self-diked, and double-walled tank designs, recognizing that these special designs provide a higher level of spill prevention. These design requirements were developed to allow for an exemption from the secondary containment requirements of 18 AAC 75.075.

ADEC is proposing the use of the Steel Tank Institute (STI SP001) inspection standard as a substitute for API 653 inspections. This inspection standard may provide a cost savings to some operators while still meeting the department's spill prevention objectives.

18 AAC 75.075. Secondary containment requirements for aboveground oil storage and surge tanks

18 AAC 75.075(a) is amended to read:

(a) Onshore **aboveground**[79] oil storage tanks must be located within a secondary containment area that has the capacity to hold the volume of the largest tank within the containment area, plus enough additional capacity to allow for local precipitation. Minimum secondary containment system requirements include

(1) berms, dikes, or retaining walls that are constructed to prevent the release of spilled oil from within the containment area;

(2) with the exception of the area under a tank, components constructed of, or lined with, materials that are

(A) adequately resistant to damage by the products stored to maintain sufficient impermeability;

[79] Technical correction to match section heading and to differentiate from 18 AAC 78

(B) resistant to damage from prevailing weather conditions;

(C) sufficiently impermeable; **and**

(D) resistant to operational damage. [**,** AND]

(3) **Repealed**. __/__/____
[CHECKING FOR THE PRESENCE OF OIL LEAKS OR SPILLS

(A) DAILY, AT A MANNED FACILITY; OR

(B) EACH TIME THE FACILITY IS VISITED, BUT AT LEAST MONTHLY, AT AN UNMANNED FACILITY.]

18 AAC 75.075(b) is amended to read:

(b) In locations where physically feasible, offshore **exploration and** production **facility** [PLATFORM] oil storage tank areas must incorporate a secondary containment method to prevent oil spills from entering the water.

18 AAC 75.075(c) is amended to read:

(c) Secondary containment systems must be maintained free of debris, **vegetation**,[80] or other materials or conditions**, including excessive accumulated water,**[81] that might interfere with the effectiveness of the system [INCLUDING EXCESSIVE ACCUMULATED RAINWATER]. **Facility personnel shall visually check for the presence of oil leaks or spills within secondary containment during routine operations, and shall conduct documented weekly inspections of secondary containment areas, including checking for**

(1) debris and vegetation,

(2) proper alignment and operation of drain valves,

(3) visible signs of oil leaks or spills, and

(4) defects or failures of the secondary containment system.

18 AAC 75.075(d) is amended to read:

(d) Drainage of water accumulations from secondary containment areas that discharge directly to the land or waters of the state must be controlled by locally operated, positive close failsafe valves or other positive means to prevent a discharge. Valves must be kept closed and locked when not in use. The owner or operator shall inspect accumulated water before

[80] Vegetation inside secondary containment is a fire hazard, restricts the ability to detect spills, and may compromise the integrity of the secondary containment

[81] "excessive accumulated water" includes rainwater, snow, and ice in quantities that compromise the capacity of the secondary containment

discharging it from a secondary containment area to ensure that no oil will be discharged and shall keep a written record of each drainage operation **and whether a sheen was present or not**.[82] If no sheen is present, water accumulated may be discharged without a state wastewater permit under 18 AAC 72. Oil-contaminated water accumulations may be discharged from secondary containment without a state wastewater permit under 18 AAC 72 if the receiving environment is not a sensitive receiving environment and if it is treated through an oil/water separating device that reduces the total concentration of hydrocarbons [TO BELOW 15 PPM]. The oil separating device must be equipped with effluent monitors and alarms that **notify** [NOTICE] the operator if the device fails.

18 AAC 75.075(e) is amended to read:

(e) **An** [A NEW] installation **placed in service after May 14, 1992** is subject to the following:

(1) impermeable liners or double bottoms that are chemically resistant to damage by the product being stored in the tank must be installed under all tanks, except for tanks containing viscous products exceeding 400 SUS (Saybolt Universal System) at storage temperatures; and

(2) drains and other penetrations through secondary containment areas must be minimized consistent with facility operational requirements.

18 AAC 75.075(f) is amended to read:

(f) At an [EXISTING] installation **placed in service before May 14, 1992**, in the event of a known or suspected discharge, the department will, in its discretion, require installation of monitoring wells to detect oil or other hazardous substances in the groundwater if the local geology and groundwater conditions allow installation of monitoring wells, and if monitoring wells will not substantially increase the risk of contaminating groundwater.

18 AAC 75.075(g) is amended to read:

(g) Rail tank car and tank truck loading areas and permanent unloading areas must[83]

(1) have a secondary containment system designed to contain the maximum capacity of any single compartment of the tank car or tank truck, including containment curbing and a trenching system or drains with drainage to a collection tank or device designed to handle a discharge;

(2) be paved, surfaced, or lined with sufficiently impermeable materials;

[82] Null reports are required to verify the inspection took place
[83] "Permanent unloading areas" is defined in Article 9.

(3) be maintained free of debris**, vegetation,** or other materials or conditions**, including excessive accumulated water,** that might interfere with the effectiveness of the system[, INCLUDING EXCESSIVE ACCUMULATED RAINWATER AND]**;**

(4) have warning lights, warning signs, or a physical barrier system to prevent premature vehicular movement**;**[.] **and**

(5) be visually inspected before any transfer operation or at least monthly.

18 AAC 75.075 is amended by adding new subsections to read:

(h) Shop-fabricated aboveground oil storage tanks of a vaulted, self-diked, or double-walled design meeting the requirements of 18 AAC 75.066(c), (d), or (e) are not required to be placed within bermed, lined, secondary containment areas if they are equipped with catchments that positively hold any fuel overflow due to tank overfill or divert it into a integral secondary containment area.

(i) In this section, "failsafe" means designed such that the equipment defaults to a safe condition in the event of an equipment failure. (Eff. 5/14/92, Register 122, am __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Rationale & Discussion

The inspection requirement in 18 AAC 75.075(a) is proposed for repeal, and new, clearer inspection criteria are proposed for 18 AAC 75.075(c). This places the secondary containment inspection requirements together in one paragraph for clarity, and provides specific direction for meeting the requirement. The new wording meets the intent of the original regulation.

The term "rainwater" has been changed to "water" and the paragraphs containing the term have been edited to clarify that quantities of water of any phase or form which compromise the secondary containment or prevent inspection of tanks and piping within secondary containment is not allowed.

The wording of 18 AAC 75.075(d) is proposed to be modified to include a requirement for null reports of sheen. The intent is to verify that inspections of drainage are being done correctly.

An additional proposed change to this paragraph is the removal of the requirement that an oil/water separating device must reduce the total concentration of hydrocarbons below 15 ppm. That performance standard is no longer consistent with the state wastewater discharge requirements under 18 AAC 72. The department notes that while a numerical performance standard is proposed for deletion, other state (18 AAC 72) and federal (40 CFR 112) requirements still apply to the discharge of accumulated water from secondary containment.

There has been confusion in the past about what is a "permanent unloading area" as listed in 18 AAC 75.075(g). That term is now defined in Article 9. Additionally, we are suggested a new requirement for visual inspection to ensure the area is functional.

We are considering a regulatory change to recognize that tanks with integral secondary containment effectively meet our current secondary containment capacity requirements and should be exempt from additional secondary containment requirements. The proposed regulation references proposed performance standards for vaulted (18 AAC 75.066(c)), self-diked (18 AAC 75.066(d)), and double-walled (18 AAC 75.066(e)) construction as requirements for this exemption.

A proposed definition of "failsafe" as it is intended to be used in 18 AAC 75.075(d) is included.

18 AAC 75.080. Requirements for Facility Oil Piping

18 AAC 75.080 is repealed and readopted, to read:

18 AAC 75.080. Requirements for Facility Oil Piping (a) Applicability. All facility oil piping associated with an oil terminal, crude oil transmission pipeline, exploration, or production facility must meet the requirements of this section**.**

(b) Corrosion Control. Metallic facility oil piping containing oil must be maintained in accordance with a corrosion control program.

(c) Design and Construction. Facility oil piping placed in service after July 1, 2008 shall be designed and constructed in accordance with American Society of Mechanical Engineers Code for Pressure Piping, ASME B31.3, *Process Pipin*g, 2004 Edition, adopted by reference, B31.4, *Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquid*s, 2002 Edition, adopted by reference, ASME B31.8, *Gas Transmission and Distribution Piping Systems*, 2003 Edition, adopted by reference, or another standard approved by the department, as appropriate, unless a more stringent requirement is set out in this section.

(d) Buried metallic facility oil piping placed in service between May 14, 1992 and July 1, 2008, must be protected from corrosion by installing protective wrapping or coating and cathodic protection appropriate for local soil conditions and must be of all welded construction with no clamped, threaded, or similar connections for lines larger than a one inch nominal pipe size.

(e) Buried facility oil piping placed in service after July 1, 2008 must be

(1) of all welded construction with no clamped, threaded, or similar connections for lines larger than one inch nominal pipe size; and

(2) unless constructed of a corrosion-resistant material approved by the department,

(A) protected from corrosion by installing protective wrapping or coating; and

(B) cathodically protected in accordance with (f) of this section.

(f) Cathodic protection systems installed after July 1, 2008, must be

(1) consistent with National Association of Corrosion Engineers (NACE) International, *Standard Recommended Practice-Control of External Corrosion on Underground or Submerged Metallic Piping System*s, 2002, RP0169-2002, adopted by reference;

(2) designed by a corrosion expert; and

(3) installed under the supervision of a corrosion expert;

(g) All buried facility oil piping installations

(1) must, if a piping segment is exposed for any reason, be carefully examined for damaged coating or corroded piping in accordance with Section 9.2.6 of American Petroleum Institute (API) *Piping Inspection Code, Inspection, Repair, Alteration, and Rerating of In-service Piping Systems,* API 570, Second Edition, October 1998, adopted by reference, Addendum 1, February 2000, adopted by reference, Addendum 2, December 2001, adopted by reference, and Addendum 3, August 2003, adopted by reference, and,

(A) if active corrosion is found, actions for control of future corrosion must be implemented; and

(B) significant repairs or replacements must meet the requirements of (c) and (e) of this section; and

(2) of metallic construction without cathodic protection

(A) must be electrically inspected by a corrosion expert for active corrosion at least once every 3 calendar years, but with intervals not exceeding 39 months; and

(B) in areas in which active corrosion is found, must be cathodically protected in accordance with (d) or (f) of this subsection, as appropriate;

(h) Aboveground facility oil piping shall be supported consistent with the requirements of ASME B31.3, *Process Pipin*g, 2004 Edition, Subsection 321, adopted by reference.

(i) After July 1, 2007, all facility oil piping must be maintained and inspected under a program developed in accordance with the requirements of API *Piping Inspection Code, Inspection, Repair, Alteration, and Rerating of In-service Piping Systems,* API 570, Second Edition, October 1998, adopted by reference, Addendum 1, February 2000, adopted by reference, Addendum 2, December 2001, adopted by reference, and Addendum 3, August 2003, adopted by reference, or another program approved by the department unless a more stringent requirement is set out in this section.

(j) The operation and maintenance of a cathodic protection system must be consistent with Section 10 of NACE International, *Standard Recommended Practice-Control of External*

*Corrosion on Underground or Submerged Metallic Piping System*s, 2002, RP0169-2002, adopted by reference, unless a more stringent requirement is set out in this section;

(1) A cathodic protection survey must be performed by a qualified/certified cathodic protection tester or a corrosion expert; and

(2) test lead wires must be maintained in a condition that enables electrical measurements to determine the effectiveness of a cathodic protection system;

(k) Aboveground facility oil piping located outside a sufficiently impermeable deck onboard a marine structure or at a soil-to-air interface must be protected against external corrosion by the application of a protective coating or by the use of corrosion-resistant materials.

(l) Aboveground facility oil piping not specified by (k) must be protected from atmospheric corrosion by the application of a protective coating or by the use of corrosion-resistant material unless the operator demonstrates by test, investigation, or experience appropriate to the environment of the piping segment that the anticipated extent of corrosion will

(1) only be a light surface oxide; or

(2) not affect the safe operation of the piping before the next scheduled API 570 inspection;

(m) Aboveground piping and valves must be

(1) visually checked for leaks or damage during routine operations or at least monthly, and

(2) appropriately protected from damage by vehicles.

(n) Facility oil piping removed from service for more than one year must be free of accumulated oil, identified as to origin, marked on the exterior with the words "Out of Service" and the date taken out of service, secured in a manner to prevent unauthorized use, and blank flanged or otherwise isolated from the system. The owner or operator shall notify the department when piping is removed from service in accordance with this paragraph.

(o) In this section,

(1) “active corrosion” means continuing corrosion which, unless controlled, could result in a spill;

(2) “buried” means covered or in contact with soil

(3) “removed from service” means not in regular use for the service intended and not included in a regular maintenance and inspection program in accordance with (i) of this section. (Eff. 5/14/92, Register 122, am __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Editor's Note: The publications adopted by reference in 18 AAC 75.080 may be reviewed at the department's offices in Anchorage, Fairbanks, or Juneau, or may be obtained directly from the appropriate publisher. The mailing address, telephone number, facsimile number, and website, if available, for each publisher are as follows:

American Society of Mechanical Engineers (ASME), 22 Law Drive, P.O. Box 2300, Fairfield, New Jersey 07007-2300; phone (800) 843-2763; fax (201) 882-1717; website: http://www.asme.org/;

National Association of Corrosion Engineers (NACE) International, 1440 South Creek Drive, Houston, Texas 77084-4906; phone (800) 797-6223; fax (281) 228-6300; website: http://www.nace.org;

American Petroleum Institute (API), 1220 L Street NW, Washington, DC 20005-4070; phone (202) 682-8000; fax (303) 397-2740; website: http://www.api-ec.api.org

Rationale & Discussion

ADEC is proposing a number of significant revisions to the facility oil piping requirements designed to address several long-standing issues regarding facility inspections and performance standards for facility oil piping and cathodic protection. The current regulations do not include a definition of facility oil piping and do not reference any inspection standards for facility oil piping, causing ambiguity and confusion regarding the proper application of the facility oil piping regulations to regulated facilities. We are proposing a definition of facility oil piping in Article 9 and the adoption of three common industry standards; one each for design and construction, inspection, and cathodic protection. ADEC believes that regulatory adoption of these three standards would resolve many of the existing ambiguities and help set clear realistic minimum standards for compliance.

First, we are considering adoption of American Society of Mechanical Engineers (ASME) pressure piping codes B31.3 and B31.4 as an appropriate standard baseline for the design and construction of new facility oil piping. The ASME B31.3 process piping code and B31.4 liquid transportation systems code provide a minimum set of rules concerning the design, materials, fabrication, testing, and examination practices for facility oil piping. These codes cover pipe, flanges, bolting, gaskets, valves, relief devices, and associated fittings, including hangars and supports.

Second, we are considering adoption of the American Petroleum Institute (API) 570 inspection standard for facility oil piping inspection, repair, and maintenance. This standard covers the inspection, repair, alteration, and re-rating of in-service piping systems, and is already in use by much of the regulated industry for inspection of metallic piping systems used for the transport of petroleum products. Adoption by regulation would ensure that regulated facilities and ADEC inspectors are both inspecting to the same standard.

The API 570 standard was originally developed in the early 1990s to provide an inspection standard for piping constructed to the ASME B31.3 and it also complements existing tank inspection standards already in regulation (the API 653 standard).

Third, we are considering incorporation of the National Association of Corrosion Engineers (NACE) RP 0169 corrosion control standard for cathodic protection of buried piping, in order to address the problem of spills caused by corrosion.

Finally, we are proposing several clarifications of existing policy and regulation, and several definitions in this section and in Article 9 to reduce ambiguity of terms.

In order to logically organize these changes, we are proposing to repeal 18 AAC 75.080 and then readopt the section in a re-organized format designed for increased clarity and ease of use.

18 AAC 75.090. Recommended practices

18 AAC 75.090. Recommended practices:

Repealed. __/__/____ (Eff. 5/14/92, Register 122; repealed __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.030 AS 46.04.070

Rationale & Discussion

ADEC notes that this section is advisory in nature and that most of the referenced standards and practices are outdated. Where third-party standards and practices are incorporated into other sections, those standards are now updated and explicitly called out.

18 AAC 75, Article 4 – Oil Discharge Prevention and Contingency Plan and Nontank Vessel Plans

18 AAC 75.425. Oil discharge prevention and contingency plan contents.

18 AAC 75.425(c) is amended to read:

(c) The submitted plan must be accompanied by a cover page or promulgation letter that includes

(1) the name of the plan holder, and the covered vessel, barge, railroad, facility, or operation, followed by the words "Oil Discharge Prevention and Contingency Plan";

(2) the date of the plan; and

(3) a statement, signed by a person with appropriate authority, committing the **oil discharge prevention and response** resources necessary to implement the plan.[84]

18 AAC 75.425(d) is amended to read:

(d) The plan must

(1) include the official plan title;

(2) consist of the **five** [FOUR] parts and contain the information described in **(e)(1)-(e)(5)** [(e)(1)-(e)(4)] of this section;

(3) contain a complete table of contents and lists of any tables or figures, with corresponding page numbers; and

(4) be presented in the order shown in (e) of this section, or include a cross-reference table that directs the reader to the appropriate information.

18 AAC 75.425(e)(2) is amended to read:

(2) Part 2 - Prevention Plan: [UNDER THE PROVISIONS OF 18 AAC 75.005 - 18 AAC 75.090, THE] **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.**[85] The prevention plan may be submitted as a separate volume, and must include, at a minimum, the following information:

[84] Added for clarification
[85] Added to clarify the connection between this paragraph and 18 AAC 75 Article 1

(A) **Discharge prevention programs –** a description and schedule of regular **oil discharge** [POLLUTION] prevention**,** inspection, and maintenance programs in place at the facility or operation**, including**[86]

(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);

(B) **Discharge history –** a history of all known **oil** discharges greater than 55 gallons that have occurred at the facility, **including the source, cause, amount, and corrective actions taken,** with an analysis of the relationship, if any, between their frequency, cause, and size, and a description of actions to be taken to prevent or mitigate similar discharges in the future;

(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 any conditions specific to the facility or operation that might increase the risk of a discharge, including physical or navigation hazards, traffic patterns, or other site-specific factors, and 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;**

(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;

18 AAC 75.425(e)(2)(F) is repealed, with the text relocated to a new subparagraph 18 AAC 75.425(e)(5):

(F) **Repealed.** __/__/____

18 AAC 75.425(e)(2)(G) is amended to read:

(G) **Waivers** - For an operation subject to a waiver, alternate compliance schedule, or existing condition of plan approval under **18 AAC 75.005 –**

[86] Wording change to make it consist with AS 46.04.030 and 18 AAC 75 Article 1

18 AAC 75.085 [18 AAC 75.005 –18 AAC 75.090] or 18 AAC 75.400 - 18 AAC 75.496, documentation of

(i) each waiver, alternate compliance schedule, or existing condition of plan approval; and

• • •

18 AAC 75.425(e)(3) is amended to read:

(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

(i) the number, type, and oil storage capacity of each container covered under the plan and its installation date, design, construction, and general condition;

(ii) the type and amount of oil stored in each container;

(iii) for vessels, a general chart showing routes normally used for the transportation of oil products within state waters, and the frequency of use for each route;

(iv) for a railroad, a map showing the location of each main line, siding, and yard area;

(v) for vessels, plans or diagrams that identify cargo, bunker, and ballast tanks, all tank capacities, cargo piping, ballast piping, winches, emergency towing equipment, power plants, manifold pipe size, containment structures and equipment, and a description of the method of containing a discharge from fuel oil tank vent overflow and fill pipes;

(vi) a **general** description of the [NORMAL] procedures for the loading or transfer of oil from or to a pipeline, facility, tank vessel, oil barge, railroad tank car, or storage tank;

• • •

18 AAC 75.425(e)(4) is amended to read:

(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 the

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)(3) **or (5), 18 AAC 75.065(i)(3), 18 AAC 75.065(l)(3) or (4)** [87]; a leak detection system for each tank if required by 18 AAC 75.065(h)(4) **or 18 AAC 75.065(l)(5)**; any other prevention or control system approved by the department under 18 AAC 75.065(i)(1)(D); a means of immediately determining the liquid level of bulk storage tanks as specified in 18 AAC 75.065(j)(3) and (4) **or 18 AAC 75.066(g)(1)(C) and (D)** [88]; maintenance practices for buried **metallic** [89] [STEEL] piping containing oil as required by 18 AAC 75.080(b); protective wrapping or coating and cathodic protection if required by **18 AAC 75.080(d)** [18 AAC 75.080(b)(1)(A)] **or (j)(1) or 18 AAC 75.047(c)(1)(B)** [90]; and corrosion surveys required by **18 AAC 75.080(j)(1)** [18 AAC 75.080(b) (2)(A)];

(iii) for a tank vessel contingency plan: measures to assure prompt detection of an oil discharge as required by 18 AAC 75.027(d); operation of a tank vessel under escort in a manner that permits an escort vessel to be available immediately to provide the intended assistance to the tank vessel as required by 18 AAC 75.027(e); tow lines as required by 18 AAC 75.027(f); and escort vessels;

(iv) for a crude oil transmission pipeline contingency plan: leak detection, monitoring, and operating requirements for crude oil pipelines that include prompt leak detection as required by 18 AAC 75.055(a) **and (e)**; [91]

18 AAC 75.425(e) is amended by adding a new paragraph to read:

(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

[87] Additional regulatory references added to match proposed changes
[88] Additional regulatory reference to match proposed new section
[89] Changed to match proposed change in 18 AAC 75.080(b)
[90] Additional regulatory references added to match changes in 18 AAC 75.080 and proposed new section 18 AAC 75.047
[91] This change is required due to suggested changes in 18 AAC 75.055.

applied to the response planning standards. (Eff. 5/14/92, Register 122, am 9/25/93, Register 127; am 3/28/96, Register 137; am 4/4/97, Register 142; am 12/14/2002, Register 164; am 5/26/2004, Register 170; am __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.035 AS 46.04.070

AS 46.04.030 AS 46.04.055

Rationale & Discussion

18 AAC 75.425(c)(3)

ADEC is considering adding language to 18 AAC 75.425(c)(3) to emphasize the importance of prevention. The revision amplifies and clarifies c-plan holder's responsibility to commit and maintain resources necessary to prevent oil discharges.

18 AAC 75.425(e)(2)

18 AAC 75.425(e)(2), the Prevention Plan portion of the c-plan regulations, requires that the plan holder verify that appropriate measures are in place to reduce the risk or size of an oil spill at the regulated operation, including demonstration of compliance with the applicable requirements of 18 AAC 75, Article 1 (18 AAC 75.005 -- 18 AAC 75.090). The ADEC believes there has been a general misunderstanding of the interplay between Article 1 and Article 4, along with a general lack of correlation between the two articles. Accordingly, we propose a number of revisions to 18 AAC 75.425(e)(2) to ensure consistency in wording and requirements between 18 AAC 75 Article 1 and Article 4.

18 AAC 75.425(e)(5)

ADEC is considering adding a new regulation, 18 AAC 75.425(e)(5), requiring that the calculation of the applicable response planning standard (RPS), and a detailed justification of any prevention reductions to the RPS, be included in the c-plan. This proposed new regulation clarifies current plan review practice.

Compliance with the revised contingency plan regulations would be required upon c-plan renewal.

18 AAC 75.445. Approval criteria for oil discharge prevention and contingency plans

18 AAC 75.445(j) is amended to read:

(j) **Training.** In addition to maintaining continuous compliance with other applicable state and federal training requirements, the plan holder shall demonstrate that

(1) designated oil spill response personnel are trained and kept current in the specifics of plan implementation, including deployment of containment boom, operation of skimmers and lightering equipment, and organization and mobilization of personnel and resources**;**

(2) personnel are trained and kept current in methods of preventing oil discharges as required by 18 AAC 75.020; and

(3) [THE PLAN HOLDER SHALL ENSURE THAT] proof of **such** training is maintained for **five** [THREE] years and is made available to the department upon request.[92]

[DESIGNATED OIL SPILL RESPONSE PERSONNEL ARE TRAINED AND KEPT CURRENT IN THE SPECIFICS OF PLAN IMPLEMENTATION, INCLUDING DEPLOYMENT OF CONTAINMENT BOOM, OPERATION OF SKIMMERS AND LIGHTERING EQUIPMENT, AND ORGANIZATION AND MOBILIZATION OF PERSONNEL AND RESOURCES. THE PLAN HOLDER SHALL ENSURE THAT PROOF OF TRAINING IS MAINTAINED FOR THREE YEARS AND IS MADE AVAILABLE TO THE DEPARTMENT UPON REQUEST.]

18 AAC 75.445 is amended by adding new subsections to read:

(m) **Prevention Plan**. The prevention plan required by 18 AAC 75.425(e)(2) must describe all oil discharge prevention programs in place at the facility or operation. The plan shall demonstrate that the applicant meets all the applicable requirements of 18 AAC 75.005 - 18 AAC 75.085 and 18 AAC 75.425(e)(2).

(n) **Response Planning Standard**. The response planning standard required by 18 AAC 75.425(e)(5) must provide a mathematical calculation of the applicable response planning standards set out in 18 AAC 75.430 – 18 AAC 75.440 and 18 AAC 75.442, and include a detailed calculation and justification of any reductions to the response planning standard. (Eff. 5/14/92, Register 122; am 9/25/93, Register 127; am 3/28/96, Register 137; am 4/4/97, Register 142; am 5/26/2004, Register 170; am __/__/____, Register ____)

Authority: AS 46.30.020 AS 46.04.030 AS 46.04.070

AS 46.04.020 AS 46.04.035

[92] Changed to match the 5-year c-plan cycle.

Rationale & Discussion

The prevention plan approval requirements have been added to provide regulatory guidance on what constitutes an acceptable prevention plan in 18 AAC 75.425(e)(2).

We are considering changes to the approval criteria of 18 AAC 75.445(j), making oil spill prevention training as required by the proposed section 18 AAC 75.020 a criteria for approval of a c-plan. This correlates with the requirements of the prevention plan portion of the c-plan (18 AAC 75.425(e)(2)). This will strengthen the training documentation requirements in order to verify training and to enforce plan holder responsibility for training.

ADEC is also proposing a technical change requiring maintenance of the training records for five years instead of three years, to match the change in c-plan approvals from three to five years.

We are considering adding a new section, 18 AAC 75.445(m), listing the approval criteria for the prevention plan portion of a c-plan. This is intended to clarify the approval criteria for c-plan applicants.

We are considering adding a new section, 18 AAC 75.445(n), covering the response planning standard and calculation of reductions. This is intended to clarify the approval criteria for c-plan applicants.

18 AAC 75.475. Notification of Nonreadiness

18 AAC 75.475 is amended by adding a new subsection to read:

(d) A plan holder shall notify the department in writing within 24 hours if a significant change occurs in, or is made to,

(1) a leak detection system required by 18 AAC 75.047,

(2) a leak detection system required by 18 AAC 75.055, or

(3) a secondary containment system required by 18 AAC 75.075,

such that the system no longer meets the applicable performance requirements. (Eff. 5/14/92, Register 122; am 11/27/2002, Register 164; am __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.04.055 AS 46.04.070
AS 46.04.030

Rationale & Discussion

In keeping with an increased emphasis on oil spill prevention, the notification of nonreadiness requirements have been expanded to include major spill prevention items which could affect the size of a potential discharge. Loss of a functional leak detection system, for crude oil transmission pipelines, or secondary containment, for oil storage tanks, could greatly affect the severity and magnitude of a spill. Additional preventative measures, such as additional aerial surveillance of pipelines, may be warranted until the systems can be repaired.

18 AAC 75, Article 9 - General Provisions

18 AAC 75.990 is amended to read:

18 AAC 75.990. Definitions

•••

(39) **Repealed.** __/__/____ ;
["EXISTING INSTALLATION" MEANS STORAGE AND SURGE TANKS, SECONDARY CONTAINMENT, PIPING AND ANY OTHER OPERATIONAL APPURTENANCES CONSTRUCTED AND INSTALLED BEFORE MAY 14, 1992, EXISTING STORAGE AND SURGE TANKS THAT HAVE BEEN RECONSTRUCTED, AS DEFINED IN API STANDARD 653, FIRST EDITION, 1991, AND SUPPLEMENT 1, JANUARY 1992, ARE CONSIDERED A NEW INSTALLATION FOR THE PURPOSES OF THIS CHAPTER]; [93]

•••

(68) **Repealed.** __/__/____ ;
["NEW INSTALLATION" MEANS STORAGE AND SURGE TANKS, SECONDARY CONTAINMENT, PIPING AND ANY OTHER OPERATIONAL APPURTENANCES CONSTRUCTED, INSTALLED, OR PLACED INTO SERVICE AFTER MAY 14, 1992, INCLUDING RECONSTRUCTED STORAGE AND SURGE TANKS, AS DEFINED IN API STANDARD 653, FIRST EDITION, 1991, AND SUPPLEMENT 1, JANUARY 1992];

•••

(75) "oil storage tank," for the purposes of 18 AAC 75.065**, 18 AAC 75.066,** and 18 AAC 75.075, means a container, including a storage and surge tank, that is used to store bulk quantities of oil and that has a capacity greater than 10,000 gallons; "oil storage tank" does not include a process pressure vessel or underground storage tank; [94]

•••

(134) “transmission pipeline” means a pipeline through which crude oil moves in transportation, including line pipe, valves, and other appurtenances connected to line pipe, pumping units, and fabricated assemblies associated with pumping units; “transmission pipeline” does not include gathering lines, flow lines, or facility **oil** piping;

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(165) “allision” means when a vessel comes into contact with a fixed object, including but not limited to piers, rocks, platforms or other objects, whether manmade or naturally occurring, with sufficient force to incur damage to the vessel;

[93] The definitions of “existing installation” and “new installation” are proposed for repeal because the terms are not used in the proposed regulations, being replaced in the regulatory text by date placed in service
[94] Added to match the proposed new section 18 AAC 75.066 for shop-fabricated aboveground tanks.

(166) "cathodic protection" means a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell through the application of either galvanic anodes or impressed current;

(167) "corrosion" means the deterioration of metal from the loss of positive charged metal ions from the metal surface into an electrolyte;

(168) "corrosion expert" means a person who

(A) by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired through a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried metal piping and metal tanks, and

(B) is accredited or certified as being qualified by NACE International as a corrosion specialist, cathodic protection specialist, or is a registered engineer with education and experience in corrosion control of buried metal piping systems and metal tanks;

(169) "double-walled aboveground oil storage tank" means an aboveground oil storage tank with a surrounding containment tank fully enclosing a sealed interstitial space of a capacity less than 100% of the storage tank capacity and preventing visual inspection of the inner tank;

(170) "facility oil piping" means piping and associated fittings, including all valves, elbows, joints, flanges, pumps, and flexible connectors,

(A) originating from or terminating at an oil storage tank regulated under 18 AAC 75.065 or 18 AAC 75.066 up to the:

(i) Union of the piping with a fuel dispensing system;

(ii) Marine header;

(iii) Fill cap or fill valve;

(iv) Forwarding pump used to transfer oil between facilities, between adjacent pump stations, or between a pressure pump station and a terminal or breakout tank; or

(v) First flange or connection within a tank truck loading, loading rack containment area; or

(B) originating from or terminating at an exploration or production well, up to the:

(i) Choke or valve interconnection with a flowline; or

(ii) First valve or flange inside a processing unit boundary;

(171) "field-constructed aboveground oil storage tank" means a welded metal aboveground oil storage tank erected on-site where it will be placed in service;

(172) "flowline" means piping and associated fittings, including all valves, elbows, joints, flanges, pumps, and flexible connectors, containing liquid oil located at a production facility that is installed or used for the purpose of transporting oil between a well pad or marine structure used for oil production and the interconnection point with a transmission pipeline and including all piping between interconnections, including multi-phase lines and process piping, except

(A) facility oil piping; and

(B) transmission pipelines;

(173) "installation" means oil storage and surge tanks and associated operational appurtenances, including secondary containment systems, integral piping, overfill protection devices, and associated leak detection equipment;

(174) "marine structure" includes any assembly permanently or temporarily attached to the seabed, and includes, by way of example, mobile offshore drilling units, prefabricated offshore platforms, and artificial islands;[95]

(175) "permanent unloading areas" means unloading areas routinely used for transfer operations, excluding areas used for short-term emergency response, seasonal usage, or short-term temporary usage to meet unusual operational demands;

(176) "pipe" or "piping" means any hollow cylinder or tube used to convey oil;

(177) "placed in service" means the date of commencement of operational use, either

(A) after initial construction or installation, or

(B) for field-constructed oil storage tanks, after the date of return to service after reconstruction as defined by API Standard 653, *Tank Inspection, Repair, Alteration, and Reconstruction*, 3rd Edition, December 2001, adopted by reference, Addendum 1, September 2003, adopted by reference, or

(C) for facility oil piping, after the date of return to service after being removed from service in accordance with 18 AAC 75.080(e); or

(D) for flow lines, after the date of return to service after being removed from service in accordance with 18 AAC 75.047(g).

(178) "qualified cathodic protection tester" means a person who is accredited or certified as being qualified as, at a minimum, CP1-CP Tester by NACE international.

[95] "artificial islands" is intended to include all forms of manmade island structures, including gravel islands and ice islands

(179) "self-diked aboveground oil storage tank" means an aboveground oil storage tank with integral secondary containment of minimum capacity of at least 100% of the capacity of the tank.

(180) "shop-fabricated aboveground oil storage tank" means an oil storage tank that is constructed at a tank manufacturer's plant and transported to a facility for installation.

(181) "vaulted aboveground oil storage tank" means an oil storage tank that is placed within a discrete secondary containment vault system at or below grade. (Eff. 5/14/92, Register 122; am 9/25/93, Register 127; am 4/4/97, Register 142; am 4/11/97, Register 142; am 1/22/99, Register 149; am 8/27/2000, Register 155; am 10/28/2000, Register 156; am 11/27/2002, Register 164; am 12/14/2002, Register 164; am 1/30/2003, Register 165; am 8/8/2003, Register 167; am 5/26/2004, Register 170; am __/__/____, Register ____)

Authority: AS 46.03.020 AS 46.03.755 AS 46.04.055
AS 46.03.050 AS 46.03.822 AS 46.04.070
AS 46.03.710 AS 46.04.020 AS 46.08.140
AS 46.03.740 AS 46.04.030 AS 46.09.010
AS 46.03.745 AS 46.04.035 AS 46.09.020

Editor's Note: The publications adopted by reference in 18 AAC 75.990 may be reviewed at the department's offices in Anchorage, Fairbanks, or Juneau, or may be obtained directly from the appropriate publisher. The mailing address, telephone number, facsimile number, and website, if available, for each publisher are as follows:

American Petroleum Institute (API), 1220 L Street NW, Washington, DC 20005-4070; phone (202) 682-8000; fax (303) 397-2740; website: http://www.api-ec.api.org

Rationale & Discussion

Clarity of terminology is essential when discussing regulatory compliance. The many people involved in the c-plan development, review, and approval process come from a wide variety of backgrounds and expectations. Concise, clear, and consistent understanding of regulatory terms is essential for an effective, broad-based discussion. In order to reduce the potential for misunderstanding or misapplication of ADEC's intent, several regulatory definitions are proposed, including new definitions of "facility oil piping" and "flow lines" in order to clearly delineate the scope of piping regulated by 18 AAC 75.080 and the proposed new section 18 AAC 75.047.