

**15-DAY EXPRESS TERMS
FOR
BUILDING STANDARDS
OF THE
CALIFORNIA STATE LANDS COMMISSION**

**REGARDING AMENDMENTS TO THE 2010 CALIFORNIA BUILDING CODE,
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2
MARINE OIL TERMINALS, CHAPTER 31F**

Legend for 15-Day Express Terms:

1. **Existing California amendment:** California 45-Day language will appear in *italics and underlined* and ~~*italics and strikeout*~~.
2. **Amended, or repealed language:** Amended, or repealed 15-Day language will appear in *italics and double underline* and ~~*italics and double strikeout*~~.
3. **Rationale:** The justification for the change is shown after each section or series of related changes.
4. **Authority and reference** citations are provided at the end of each express term.

4. **3101F.7 Alternatives.** *In special circumstances where certain requirements of these standards cannot be met, alternatives that provide an equal or better protection of the public health, safety and the environment shall be subject to Division Chief approval* ~~*or the approval of any employee of the Division authorized by the Chief to act on his behalf*~~ *with concurrence of the Division's lead engineer.*

Rationale:

Based on public comment, the proposed language for authorized approvers is modified to ensure that the Division's lead engineer has direct input in the alternatives approval process.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

6. Table 31F-2-21

TABLE 31F-2-21
MAXIMUM INTERVAL BETWEEN UNDERWATER-AUDIT INSPECTIONS (YEARS)¹

<u>INSPECTION CONDITION ASSESSMENT RATING (ICAR)⁶</u> <u>CONDITION RATING FROM PREVIOUS INSPECTION</u>	CONSTRUCTION MATERIAL				CHANNEL BOTTOM OR MUDLINE - SCOUR⁴	
	Unwrapped Timber or Unprotected Steel (no coating or cathodic protection)⁴		Concrete, Wrapped Timber, Protected Steel or Composite Materials (FRP, plastic, etc.)⁴			
	Benign² Environment	Aggressive³ Environment	Benign² Environment	Aggressive³ Environment	Benign² Environment	Aggressive³ Environment
6 (Good)	6	4	6	5	6	5
5 (Satisfactory)	6	4	6	5	6	5
4 (Fair)	5	3	5	4	6	5
3 (Poor)	4	3	5	4	6	5
2 (Serious)	2	1	2	2	2	2
1 (Critical)	N/A ⁵	N/A ⁵	N/A ⁵	N/A ⁵	N/A ⁵	N/A ⁵

1. *The maximum interval between Underwater Audit-Inspections shall be ~~reduced~~ changed as appropriate, with the approval of the Division, based on the extent of deterioration observed on a structure, the rate of further anticipated deterioration, or other factors.*
2. *Benign environments include fresh water and maximum current velocities less than 1.5 knots for the majority of the days in a calendar year*
3. *Aggressive environments include brackish or salt water, polluted water, or waters with current velocities greater than 1.5 knots for the majority of the days in the calendar year.*
4. *For most structures, two maximum intervals will be shown in this table, one for the assessment of construction material (timber, concrete, steel, etc.) and one for scour (last 2 columns). The shorter interval of the two should dictate the maximum interval used.*
5. *MOTs rated "Critical" will not be operational; and "Emergency Action" shall be required in accordance with Table 31F-2-76.*
6. *ICARs shall be assigned in accordance with Table 31F-2-4.*

Rationale:

Based on public comment, the proposed title of the first column of Table 31F-2-21 is updated to align with the nomenclature "Inspection Condition Assessment Rating (ICAR)". To further clarify this issue, Commission staff added footnote 6 to provide a link to Table 31F-2-4, which defines the ICARs.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

9. **3102F.3.1 Objective.** *The objective of the audit is to review structural, mechanical and electrical systems on a prescribed periodic basis to verify that each berthing system is fit for its specific defined purpose. The audit includes both above water and underwater inspections, as well as and engineering analyses evaluation, documentation and recommended follow-up actions.*

[Note: last sentence was originally underlined for emphasis]

Rationale:

Based on public comment, the proposed language is modified to remove a duplicative “and” and add “recommended”, to clarify that recommended follow-up actions are assigned during the audit process and implemented thereafter.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

12. **3102F.3.3.2 Subsequent audits.** *An subsequent above water audit report of each ~~terminal structural, mechanical and electrical systems~~ shall be completed at a maximum interval of 4 3-years, and includes documentation of above water and underwater inspections. This interval may be reduced based on the recommendation of the audit team leader, and with the approval of the Division, depending on the extent and rate of deterioration or other factors.*

The maximum interval for above water inspections shall be 4 years. The maximum interval for underwater inspections audits is dependent upon the condition of the facility, the construction material type and/or the environment at the mudline, as shown in Table 31F-2-21.

If there are no changes in the defined purpose (see Section 3102F.3.6.1) of the berthing system(s), then analyses from previous audits may be referenced. However, if there is a significant change in a berthing system(s), or when deterioration or damage must be considered, a new analysis may be required.

The Division may require an audit, inspection or supplemental evaluations to justify changes in the use of ~~the a~~ berthing system(s). ~~An example of such change would be in the berthing and mooring configuration of larger or smaller vessels relative to dolphin and fender spacing, and potential resultant modification to operational environmental limitations (e.g., wind speed).~~

~~Subsequent audits of the above water and underwater structures and mechanical and electrical systems may or may not be performed concurrently, depending upon the required inspection intervals based on the prior audit report.~~

Rationale:

Based on public comment, the proposed language is modified to remove ambiguity by adding “report” and removing “above water and underwater”.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

13. **3102F.3.4.4 Seismic sStructural analyst.** A California registered civil or structural engineer shall ~~perform-certify~~ be in responsible charge of the seismic structural evaluations required for the audit.

Rationale:

Based on public comment, the proposed language is modified to align with industry standard (Business & Professions Code §6703) nomenclature of “responsible charge”.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

17. **3102F.3.5.1 Above water structural inspection.** The above water inspection shall include all accessible components above +3 ft MLLW, ~~excluding the piles.~~ Accessible components shall be defined as those components above and below deck that are reachable without the need for excavation or extensive removal of materials that may impair visual inspection. The above water inspection shall include, but not be limited to, the following:

1. Piles
24. Pile caps
- ~~32.~~ Beams
- ~~43.~~ Deck soffit
- ~~54.~~ Bracing (if completely above water)
- ~~65.~~ Retaining walls and bulkheads
- ~~76.~~ Connections
- ~~87.~~ Seawalls
- ~~98.~~ Slope protection
109. Deck topsides and curbing
- ~~1140.~~ Expansion joints
- ~~1244.~~ Fender system components
- ~~1342.~~ Dolphins and deadmen
- ~~1443.~~ Mooring points and hardware
- ~~1544.~~ Navigation aids
- ~~1645.~~ Platforms, ladders, stairs, handrails and gangways
- ~~1746.~~ Backfill (sinkholes/differential settlement)

Rationale:

Based on public comment, the Commission staff has become aware that the delineation between above water and underwater structural inspections requires further evaluation, and therefore the language is reverted to the existing code language, with the exception of typographical errors.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

20. **3102F.3.5.2 Underwater structural inspection.** ~~The underwater inspection shall include all accessible components from +3 ft MLLW to the mudline, including but not limited to piles, pile bracing, and the slope and slope protection, in areas immediately surrounding the MOT. The water depth at the berth(s) shall be evaluated, verifying the maximum or loaded draft specified in the MOT's Operations Manual (2 CCR 2385 (d)) [2.1].~~

~~The underwater structural inspection shall include the Level I, II and III inspection efforts, as shown in Tables 31F-2-32 and 31F-2-43. The underwater inspection levels of effort are described below, per [2.2]:~~

~~...
...~~

~~Level III – A detailed inspection typically involving nondestructive or partially-destructive testing, conducted to detect hidden or interior damage, or to evaluate material homogeneity. Level III testing is generally limited to key structural areas, areas which are suspect or areas which may be representative of the underwater structure.~~

~~Typical inspection and testing techniques include the use of ultrasonics, coring or boring, physical material sampling and in situ hardness testing. Level III testing is generally limited to key structural areas, areas which are suspect, or areas which may be representative of the underwater structure.~~

Rationale:

Based on public comment, the Commission staff has become aware that the delineation between above water and underwater structural inspections requires further evaluation, and therefore the language in the first paragraph is reverted to the existing code language.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

22. Figure 31F-2-1

EXAMPLE STATEMENT OF TERMINAL OPERATING LIMITS

BERTHING SYSTEM NAME: _____
FACILITY OWNER/OPERATOR: _____
FACILITY ADDRESS: _____

DATE: _____
No. OF TRANSFERS/YEAR: _____
OIL SPILL AT RISK (BSL): _____
FACILITY SEISMIC CLASSIFICATION: _____
FACILITY MOORING/BERTHING CLASSIFICATION: _____
FACILITY FIRE HAZARD CLASSIFICATION: _____

VESSEL SIZE LIMITS:

ALL MOORING LINES SHALL HAVE
A MINIMUM BREAKING STRENGTH OF _____

MAX DRAFT AT BERTH

MAX FREEBOARD AT BERTH

MAXIMUM VESSEL

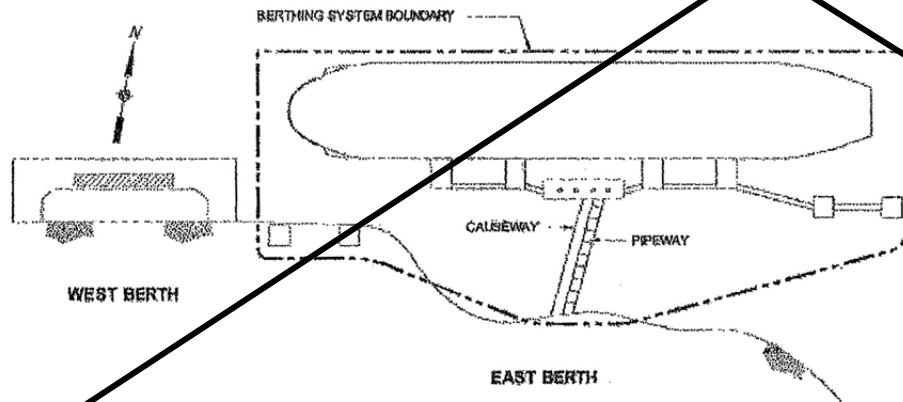
LOA = _____
 DWT = _____
 BEAM = _____
 DRAFT = _____
 LBP = _____

MAX WATER DEPTH = _____
 WITH UNDERKEEL CLEARANCE OF _____
 (FROM OPERATION MANUAL)

MINIMUM VESSEL:

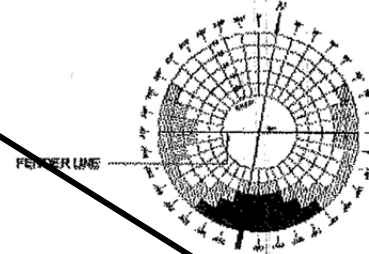
LOA = _____
 DWT = _____
 BEAM = _____
 DRAFT = _____
 LBP = _____

PHYSICAL BOUNDARIES OF BERTHING SYSTEM:



ENVIRONMENTAL CONDITION LIMITS:

(MUST BE QUALIFIED AND DOCUMENTED BY
A MOORING/BERTHING ANALYSIS)



WIND RESTRICTION DIAGRAM

NOTE:

WIND RESTRICTION DIAGRAM IS
 APPLICABLE WITH A MAXIMUM
 BRU OR FLOOD CURRENT OF
 3.2 KNOTS, WAVE PERIOD 1-4.0
 SECONDS, CHANGE IN DRAFT < 6 FT,
 AND PASSING VESSEL EFFECTS
 ARE INSIGNIFICANT.

LEGEND:

TERMINATE
 PRODUCT TRANSFER

 DISCONNECT PRODUCT LINE
 AND DEPART BERTH

FIGURE 31F-2-1

EXAMPLE

STATEMENT OF TERMINAL OPERATING LIMITS Terminal Name & Location 50 to 65 KDWT Vessel Starboard Side

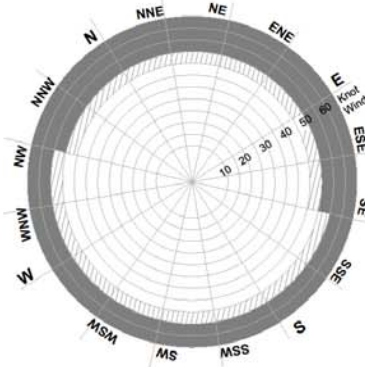
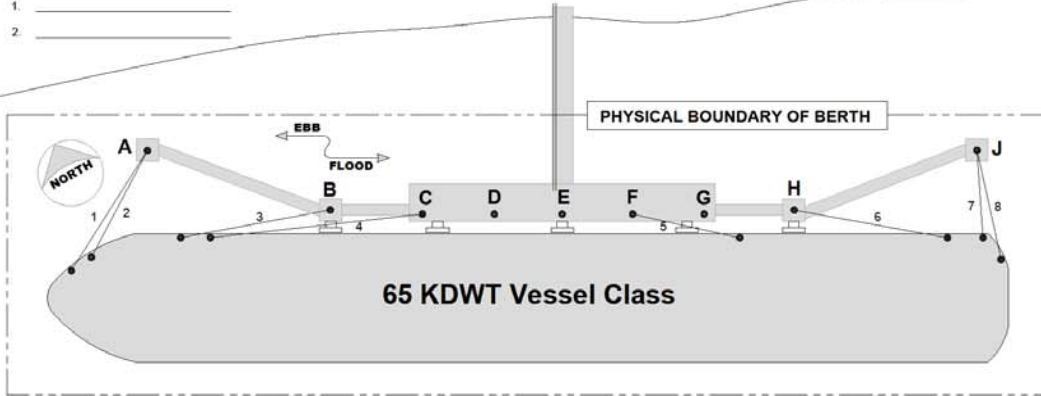
GENERAL INFORMATION

REFERENCE CALCULATION(S):

NAME OF REPORT(S) / PREPARER(S) / DATE(S)

ALTERNATIVE(S) APPROVED:

1. _____
2. _____



WIND RESTRICTION DIAGRAM

LEGEND:

- OPERATIONAL CONDITION LIMIT:
TERMINATE PRODUCT TRANSFER
- SURVIVAL CONDITION LIMIT:
DISCONNECT PRODUCT LINES &
DEPART BERTH

ENVIRONMENTAL CONDITION LIMITS

1. WIND RESTRICTION DIAGRAM IS APPLICABLE FOR:
 - MAXIMUM EBB CURRENT 3.9 KNOTS TOWARDS, 290 DEG TO 310 DEG FROM NORTH
 - MAXIMUM FLOOD CURRENT 2.6 KNOTS TOWARDS, 110 DEG TO 130 DEG FROM NORTH
 - WAVE PERIOD: T < 4.0 SEC
2. TERMINATE PRODUCT TRANSFER AND DISCONNECT IF CURRENT EXCEEDS MAGNITUDE OR DIRECTION STATED IN NOTE 1.

MOORING DEVICE INFORMATION		
MOORING POINT	DEVICE TYPE	CAPACITY (KIPS)
A	DOUBLE HOOK	300 (150 PER HOOK)
B	DOUBLE HOOK	300 (150 PER HOOK)
C	BOLLARD	200
D	BOLLARD	OUT OF SERVICE
E	BOLLARD	200
F	BOLLARD	200
G	BOLLARD	OUT OF SERVICE
H	DOUBLE HOOK	300 (150 PER HOOK)
J	TRIPLE HOOK	450 (150 PER HOOK)

VESSEL DESCRIPTION:

DWT	65,570 LT
MAXIMUM ARRIVAL DISPLACEMENT	45,500 LT
MAXIMUM DRAFT	60.0 FT
MAXIMUM ARRIVAL DRAFT	38.0 FT
MAXIMUM LOA	750.0 FT
MAXIMUM BEAM	105.0 FT

BERTH DESCRIPTION:

MINIMUM WATER DEPTH	40.0 FT @ MLLW
MINIMUM UNDERKEEL CLEARANCE	2.0 FT

BERTHING NOTES:

1. MAXIMUM IMPACT VELOCITY = 0.33 FPS.
2. BERTHING IS NOT ALLOWED AT AN APPROACH ANGLE GREATER THAN 6 DEGREES.
3. NO BERTHING OPERATION WILL TAKE PLACE WITH WIND VELOCITIES GREATER THAN 38 KNOTS (43.7 MPH).

MOORING NOTES:

1. PASSING VESSEL EFFECTS ARE CONSIDERED IN THE MOORING ANALYSIS.
2. MAXIMUM ALLOWED
SURGE : +/- 10 FT.
SWAY : +/- 2.0 FT.
3. STOP OPERATIONS IF A PASSING VESSEL WITH LOA > 250 FT IS WITHIN 300 FT.
4. DO NOT EXCEED ONE LINE PER HOOK.

MOORING LINE DESCRIPTION :

MINIMUM NO. OF LINES	8
NO. OF HEAD LINES	0
NO. OF AFT LINES	0
NO. OF BREAST LINES	2 FORWARD, 2 AFT
NO. OF SPRING LINES	2 FORWARD, 2 AFT

MINIMUM BREAKING LOAD, MBL: 165 KIPS
ACTUAL LINE LOADS NOT TO EXCEED ___% OF MBL

FIGURE 31F-2-1

REV. NO. & DATE

Rationale:

Based on public comment, the proposed language is amended as specified in the following five items:

- (1) **“GENERAL INFORMATION”** – Addition of “(S)” following “CALCULATION”, “REPORT”, “PREPARER” and “DATE” (4 total), and modification of “ALTERNATIVES” TO “ALTERNATIVE(S)” to correct these typographical errors.
- (2) Modification of **“PHYSICAL BOUNDARY OF BERTHING SYSTEM”** label to **“PHYSICAL BOUNDARY OF BERTH”** to remove the potential for misunderstanding, as “berthing systems” may extend beyond the example boundary shown.
- (3) **“ENVIRONMENTAL CONDITION LIMITS”** – Modification of example current angle statements so that the current directions generally align with the face-of-wharf and ebb-flood arrows.
- (4) **“BERTH DESCRIPTION:”** – Addition of “MINIMUM” before “WATER DEPTH” and removal of “MINIMUM WATER DEPTH 38.0 FT”, as these example statements introduced greater confusion than benefit.
- (5) **“BERTH NOTES:”** – Removal of item #4, as this example statement introduced greater confusion than benefit.

[Note that graphical modifications could not be marked using the double strikethrough and double underline format, and therefore, the amendments are listed above.]

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

23. TABLE 31F-2-54

**TABLE 31F-2-5
CONDITION ASSESSMENT RATINGS (CAR) [2.2]**

RATING		DESCRIPTION OF STRUCTURAL SYSTEMS, ABOVE AND BELOW WATER LINE
6	<i>Good</i>	<i>No problems or only minor problems noted. Structural elements may show very minor deterioration, but no overstressing observed. The capacity of the structure meets the requirements of this standard. The structure should be considered fit for purpose. No repairs or upgrades are required.</i>
5	<i>Satisfactory</i>	<i>Limited minor to moderate defects or deterioration observed, but no overstressing observed. The capacity of the structure meets the requirements of this standard. The structure should be considered fit for purpose. No repairs or upgrades are required.</i>
4	<i>Fair</i>	<i>All primary structural elements are sound; but minor to moderate defects or deterioration observed. Localized areas of moderate to advanced deterioration may be present, but do not significantly reduce the load bearing capacity of the structure. The capacity of the structure is no more than 15 percent below the structural requirements of this standard, as determined from an engineering evaluation. The structure should be considered as marginal. Repair and/or upgrade measures may be required to remain operational. Facility may remain operational provided a plan and schedule for remedial action is presented to and accepted by the Division.</i>
3	<i>Poor</i>	<i>Advanced deterioration or overstressing observed on widespread portions of the structure, but does not significantly reduce the load bearing capacity of the structure. The capacity of the structure is no more than 25 percent below the structural requirements of this standard, as determined from an engineering evaluation. The structure is not fit for purpose. Repair and/or upgrade measures may be required to remain operational. The facility may be allowed to remain operational on a restricted or contingency basis until the deficiencies are corrected, provided a plan and schedule for such work is presented to and accepted by the Division.</i>
2	<i>Serious</i>	<i>Advanced deterioration, overstressing or breakage may have significantly affected the load bearing capacity of primary structural components. Local failures are possible and loading restrictions may be necessary. The capacity of the structure is more than 25 percent below than the structural requirements of this standard, as determined from an engineering evaluation. The structure is not fit for purpose. Repairs and/or upgrade measures may be required to remain operational. The facility may be allowed to remain operational on a restricted basis until the deficiencies are corrected, provided a plan and schedule for such work is presented to and accepted by the Division.</i>
1	<i>Critical</i>	<i>Very advanced deterioration, overstressing or breakage has resulted in localized failure(s) of primary structural components. More widespread failures are possible or likely to occur and load restrictions should be implemented as necessary. The capacity of the structure is critically deficient relative to the structural requirements of this standard. The structure is not fit for purpose. The facility shall cease operations until deficiencies are corrected and accepted by the Division.</i>

**TABLE 31F-2-4
ASSESSMENT RATINGS**

RATING		DESCRIPTION OF STRUCTURE(S) AND/OR SYSTEMS⁴	
		OSAR¹ and SSAR²	ICAR³
6	<u>Good</u>	<u>The capacity of the structure or system meets the requirements of this standard. The structure or system should be considered fit-for-purpose. No repairs or upgrades are required.</u>	<u>No problems or only minor problems noted. Structural elements may show very minor deterioration, but no overstressing observed. No repairs or upgrades are required.</u>
5	<u>Satisfactory</u>	<u>The capacity of the structure or system meets the requirements of this standard. The structure or system should be considered fit-for-purpose. No repairs or upgrades are required.</u>	<u>Limited minor to moderate defects or deterioration observed, but no overstressing observed. No repairs or upgrades are required.</u>
4	<u>Fair</u>	<u>The capacity of the structure or system is no more than 15 percent below the requirements of this standard, as determined from an engineering evaluation. The structure or system should be considered as marginal. Repair and/or upgrade measures may be required to remain operational. Facility may remain operational provided a plan and schedule for remedial action is presented to and accepted by the Division.</u>	<u>All primary structural elements are sound, but minor to moderate defects or deterioration observed. Localized areas of moderate to advanced deterioration may be present, but do not significantly reduce the load bearing capacity of the structure. Repair and/or upgrade measures may be required to remain operational. Facility may remain operational provided a plan and schedule for remedial action is presented to and accepted by the Division.</u>
3	<u>Poor</u>	<u>The capacity of the structure or system is no more than 25 percent below the requirements of this standard, as determined from an engineering evaluation. The structure or system is not fit-for-purpose. Repair and/or upgrade measures may be required to remain operational. The facility may be allowed to remain operational on a restricted or contingency basis until the deficiencies are corrected, provided a plan and schedule for such work is presented to and accepted by the Division.</u>	<u>Advanced deterioration or overstressing observed on widespread portions of the structure, but does not significantly reduce the load bearing capacity of the structure. Repair and/or upgrade measures may be required to remain operational. The facility may be allowed to remain operational on a restricted or contingency basis until the deficiencies are corrected, provided a plan and schedule for such work is presented to and accepted by the Division.</u>
2	<u>Serious</u>	<u>The capacity of the structure or system is more than 25 percent below the requirements of this standard, as determined from an engineering evaluation. The structure or system is not fit-for-purpose. Repairs and/or upgrade measures may be required to remain operational. The facility may be allowed to remain operational on a restricted basis until the deficiencies are corrected, provided a plan and schedule for such work is presented to and accepted by the Division.</u>	<u>Advanced deterioration, overstressing or breakage may have significantly affected the load bearing capacity of primary structural components. Local failures are possible and loading restrictions may be necessary. Repairs and/or upgrade measures may be required to remain operational. The facility may be allowed to remain operational on a restricted basis until the deficiencies are corrected, provided a plan and schedule for such work is presented to and accepted by the Division.</u>
1	<u>Critical</u>	<u>The capacity of the structure or system is critically deficient relative to the requirements of this standard. The structure or system is not fit-for-purpose. The facility shall cease operations until deficiencies are corrected and accepted by the Division.</u>	<u>Very advanced deterioration, overstressing or breakage has resulted in localized failure(s) of primary structural components. More widespread failures are possible or likely to occur and load restrictions should be implemented as necessary. The facility shall cease operations until deficiencies are corrected and accepted by the Division.</u>

- 1 OSAR = Operational Structural Assessment Ratings
- 2 SSAR = Seismic Structural Assessment Ratings
- 3 ICAR = Inspection Condition Assessment Ratings [2.2]; Ratings shall be assigned comparing the observed condition to the original condition.
- 4 Structural, mooring or berthing systems

Rationale:

Based on public comment, the proposed language for footnote 3 is amended with an additional statement to clarify that condition assessment ratings shall be assigned comparing the observed condition to the original condition.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

28. Deletion of Example ES-1 Table, add Tables 31F-2-7A, Table 31F-2-7B and 31F-2-7C.

<i>Example</i>	EXECUTIVE SUMMARY TABLE (ES-1)						
	GLOBAL STRUCTURAL CONDITION ASSESSMENT RATINGS (CAR)						
<i>BERTHING SYSTEM</i>	<i>SYSTEM</i>	<i>CONDITION ASSESSMENT RATING</i>	<i>FROM THIS AUDIT[†]</i>	<i>FROM PREVIOUS AUDIT[†]</i>	<i>NEXT AUDIT DUE (MO/YR)</i>	<i>ASSIGNED FOLLOW-UP ACTIONS</i>	<i>FIT-FOR-PURPOSE?</i>
<i>North Wharf</i>	<i>Above Water Structure</i>	<i>4 (Fair)</i>	<i>4 (date)</i>		<i>6/2004</i>	<i>Upgrade Design and Implementation</i>	<i>No</i>
	<i>Underwater Structure</i>	<i>5 (Satisfactory)</i>		<i>4 (date)</i>	<i>10/2006</i>		<i>Yes</i>
<i>South Wharf</i>	<i>Above Water Structure</i>	<i>4 (Fair)</i>	<i>4 (date)</i>		<i>6/2004</i>	<i>Repair Design Inspection</i>	<i>No</i>
	<i>Underwater Structure</i>	<i>3 (Poor)</i>		<i>4 (date)</i>	<i>10/2006</i>	<i>Special Inspection; Repair Design Inspection</i>	<i>No</i>
<i>Dolphin, Trestle, etc.</i>							

[†]Place check mark and date of respective audit in proper column to indicate for each structural system, whether the system was included in the current audit or the results are summarized from a previous audit.

TABLE 31F-2-7A

<u>Example</u>	EXECUTIVE SUMMARY TABLE (ES-1A) GLOBAL OPERATIONAL STRUCTURAL ASSESSMENT RATINGS (OSAR)									REV. # MM/YYYY
<u>BERTHING SYSTEM</u>	<u>BERTH(S) ¹</u>	<u>STRUCTURE(S) ¹</u>	<u>TYPE OF ANALYSIS ²</u>	<u>OSAR RATING ⁴</u>	<u>LAST AUDIT DATE</u> <small>(M M /YYYY)</small>	<u>NEXT AUDIT DUE DATE</u> <small>(M M /YYYY)</small>	<u>LAST ANALYSIS DATE</u> <small>(M M /YYYY) ⁵</small>	<u>REPAIR / REPLACEMENT DUE DATE</u> <small>(M M /YYYY) ⁶</small>	<u>FIT-FOR-PURPOSE</u> <small>(Y/N)</small>	<u>DESCRIPTION OR COMMENTS ⁷</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Wharfhead</u>	<u>O</u>	<u>5</u>	<u>08/2008</u>	<u>08/2011</u>	<u>02/2008</u>	<u>N/A</u>	<u>Y</u>	<u>None</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Mooring Dolphin</u>	<u>M</u>	<u>2</u>	<u>08/2008</u>	<u>08/2011</u>	<u>05/2008</u>	<u>12/2008</u>	<u>N</u>	<u>Hook capacity inadequate</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Breasting Dolphin</u>	<u>B</u>	<u>3</u>	<u>08/2008</u>	<u>08/2011</u>	<u>06/2008</u>	<u>02/2010</u>	<u>Y</u>	<u>Berthing velocity restrictions required. Velocity monitoring system operational. Fender system to be upgraded. See Terminal Operating Limits.</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Overall</u>	<u>O</u>	<u>4</u>	<u>08/2008</u>	<u>08/2011</u>	<u>02/2008</u>	<u>N/A</u>	<u>Y</u>	<u>None</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Dolphins,</u> <u>Trestles,</u> <u>Catwalks,</u> <u>Bulkhead walls,</u> <u>etc.</u>			<u>08/2008</u>	<u>08/2011</u>				
<u>South Wharf</u>	<u>Berth 2</u>				<u>08/2008</u>	<u>08/2011</u>				

TABLE 31F-2-7B

<u>Example</u>	<u>EXECUTIVE SUMMARY TABLE (ES-1B)</u>								<u>REV. #</u>
	<u>GLOBAL SEISMIC STRUCTURAL ASSESSMENT RATINGS (SSAR)</u>								<u>MM/YYYY</u>
<u>BERTHING SYSTEM</u>	<u>BERTH(S)¹</u>	<u>STRUCTURE(S)¹</u>	<u>SSAR RATING⁴</u>	<u>LAST AUDIT DATE (M/M/YYYY)</u>	<u>NEXT AUDIT DUE DATE (M/M/YYYY)</u>	<u>LAST ANALYSIS DATE (M/M/YYYY)⁵</u>	<u>REPAIR / REPLACEMENT DUE DATE (M/M/YYYY)⁶</u>	<u>FIT-FOR-PURPOSE (Y/N)</u>	<u>DESCRIPTION OR COMMENTS⁷</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Wharfhead</u>	<u>2</u>	<u>08/2008</u>	<u>08/2011</u>	<u>05/2008</u>	<u>02/2010</u>	<u>N</u>	<u>Level 1 – OK; SAP2000 Pushover Analysis</u> <u>Level 2 – NG; SAP2000 Pushover Analysis displacements too large and liquefaction</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Trestle</u>	<u>5</u>	<u>08/2008</u>	<u>08/2011</u>	<u>05/2008</u>	<u>N/A</u>	<u>Y</u>	<u>Level 1 – OK; SAP2000 Linear Analysis</u> <u>Level 2 – OK; SAP2000 Linear Analysis</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>30" Crude Line</u>	<u>5</u>	<u>08/2008</u>	<u>08/2011</u>	<u>05/2008</u>	<u>N/A</u>	<u>Y</u>	<u>Level 1 – N/A</u> <u>Level 2 – OK; CAESAR Analysis</u>
<u>North Wharf</u>	<u>Overall</u>	<u>Overall</u>							
<u>North Wharf</u>	<u>Berth 1</u>	<u>Dolphin,</u> <u>Pipeline Trestle,</u> <u>Bulkhead walls,</u> <u>etc.</u>							
<u>South Wharf</u>	<u>Berth 2</u>								

TABLE 31F-2-7C

<u>Example</u>	EXECUTIVE SUMMARY TABLE (ES-1C)							REV. #
	GLOBAL INSPECTION CONDITION ASSESSMENT RATINGS (ICAR)⁸							MM/YYYY
<u>BERTHING SYSTEM</u>	<u>BERTH(S)¹</u>	<u>STRUCTURE(S)¹</u>	<u>TYPE OF INSPECTION³</u>	<u>ICAR RATING^{4, 9}</u>	<u>LAST INSPECTION DATE (MM/YYYY)¹⁰</u>	<u>INSPECTION INTERVAL (YRS.)</u>	<u>NEXT INSPECTION DUE DATE (MM/YYYY)¹⁰</u>	<u>DESCRIPTION OR COMMENTS⁷</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Wharfhead</u>	<u>AW</u>	<u>5</u>	<u>02/2008</u>	<u>3</u>	<u>02/2011</u>	<u>General satisfactory condition.</u> <u>See RAPs in Table ES-2 for details.</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Wharfhead</u>	<u>UW</u>	<u>4</u>	<u>02/2008</u>	<u>5</u>	<u>02/2013</u>	<u>Pile damage: 10 severe, 15 minor.</u> <u>See RAPs in Table ES-2 for details.</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Breasting Dolphin</u> <u>BD-1</u>	<u>AW</u>	<u>6</u>	<u>02/2008</u>	<u>3</u>	<u>02/2011</u>	<u>See RAPs in Table ES-2</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Breasting Dolphin</u> <u>BD-1</u>	<u>UW</u>	<u>5</u>	<u>02/2008</u>	<u>5</u>	<u>02/2013</u>	<u>See RAPs in Table ES-2</u>
<u>North Wharf</u>	<u>Berth 1</u>	<u>Dolphins,</u> <u>Trestles,</u> <u>Catwalks,</u> <u>Bulkhead walls,</u> <u>etc.</u>						
<u>South Wharf</u>	<u>Berth 2</u>							

These notes apply to Table 31F-2-7A through 7C:

1. The term "Overall" shall be input in this field when the assessment ratings are summarized for a berth.
2. "Types of Analyses": "O" = Operational Loading Analysis, "M" = Mooring Analysis, "B" = Berthing Analysis
3. "Types of Inspections": "AW" = Above Water Inspection, "UW" = Underwater Inspection
4. All assessment ratings shall be assigned in accordance with Table 31F-2-4.
5. The "Analysis Dates" are defined by the month and year in which the final design package is submitted to the Division.
6. The "Repair/Replacement Dates" are defined by the month and year in which the repair/replacement is to be completed and operational.
7. The "Description or Comments" shall reference all MOT operating limits. For OSARs, this includes berthing velocity restrictions, load limits, etc. For SSARs, this includes a brief list of the findings for each Seismic Performance Level.
8. Inspection findings may trigger a structural reassessment (see Tables 31F-2-7A and 31F-2-7B).
9. Ratings shall be assigned comparing the current observed condition to the original condition.
10. The "Inspection Dates" are defined by the month and year in which the last day of formal field inspection is conducted.

Rationale:

Based on public comment to Express Term #23, the proposed language for footnote 9 is amended to align with the proposed addition to Express Term #23.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

32. **3102F.3.7 Follow-up actions.** ~~Structural~~ Follow-up actions as described in Table 31F-2-76 shall be prescribed. Multiple follow-up actions may be assigned; however, guidance ~~should~~ shall be provided as to the order in which the follow-up actions should be carried out.

If an assessment rating CAR of "1", "2" or "3" (Table 31F-2-54) or a RAP of "P1" or "P2" (Table 31F-2-65) or "Emergency Action" using Table 31F-2-76, is assigned to a structure, berthing system or critical component, the Division shall be notified immediately. The Executive Summary Tables ES-2 (see Example Tables 31F-2-7A through 31F-2-7C and 31F-2-8) audit report shall include implementation schedules for all follow-up and remedial actions. Follow-up and remedial actions and implementation schedules are subject to Division approval. Follow-up actions shall also state the maximum interval before the next audit. Executive Summary Tables shall be maintained and updated regularly by the MOT, and shall be submitted in the audit, inspections, and/or upon Division request. For action plan implementation, see Section 3102F.3.9.

Rationale:

Based on public comment, the proposed language in the second sentence of the second paragraph is amended to correct this statement, since follow-up and remedial actions are only reported in the Executive Summary Table ES-2 (corresponding to Example Table 31F-2-8).

Additionally, as a result of public comment, the proposed language in the fourth sentence of the second paragraph is modified with the removal of "regularly" and the addition of "inspections" to clarify that Executive Summary Tables should be maintained and updated as necessary, and shall be submitted with, but not limit to, the inspections.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

33. **3102F.3.8 Documentation and reporting.** ~~The audit, inspection and other reports and drawings shall be signed and stamped by the responsible engineers, including the audit team leader. The inspection and other reports and drawings shall be signed and stamped by the engineers in responsible charge.~~

Each audit and inspection, whether partial or complete, shall be adequately documented. Partial audits inspections cover only specific systems or equipment examined. The resulting reports shall summarize and reference relevant previous ratings and deficiencies. Inspection reports shall be included in subsequent audits.

The contents of the audit and inspection reports for each MOT berthing system shall, at a minimum, include the following as appropriate:

Executive summary – a concise narrative summary of the audit or inspection results and analyses conclusions. It shall include summary information for each berthing system, including an overview of the assigned follow-up actions (See Example Tables ES-1 and ES-2). The Executive

Summary Tables shall also be included (see Example Tables 31F-2-7A through 31F-2-7C and 31F-2-8).

Table of contents

Body of report

Introduction – a brief description of the purpose and scope of the audit or inspection, as well as a description of the inspection/evaluation methodology used ~~for the audit~~.

Existing conditions – a ~~brief~~ description, along with a summary, of the observed conditions. Subsections ~~should~~ shall be used to describe the above water structure, underwater structure, fire, piping/pipeline, and mechanical and electrical systems, to the extent each are included in the scope of the audit. Photos, plan views and sketches shall be utilized as appropriate to describe the structure and the observed conditions. Details of the inspection results such as test data, measurements data, etc., shall be documented in an appendix.

Evaluation and assessment – assessment ratings a CAR shall be assigned to all structures and/or berthing structural systems (above and under water). Also, see Section 3102F.3.6. Mooring and berthing analyses, structural analysis results, and a ~~All supporting calculations, as-built drawings and documentation shall be included in appendices as appropriate to substantiate the ratings. However, the results and recommendations of the engineering analyses shall be included in this section. Component deficiencies should~~ shall be described and a corresponding RAP assigned.

Follow-up actions – Specific ~~structural~~ follow-up actions (Table 31F-2-6) shall be documented (Table 31F-2-78), and remedial schedules included, for each audited system. Audit team leaders shall specify which follow-up actions require a California registered engineer to certify that the completion is acceptable.

Appendices – When appropriate, the following appendices shall be included:

1. Background data on the terminal – description of the service environment (wind/waves/currents), extent and type of marine growth, unusual environmental conditions, etc.
2. Inspection/testing data
3. Mooring and berthing analyses
4. Structural and seismic analyses and calculations
5. Geotechnical report
6. MOT Fire Protection Assessment ~~Plan~~
7. Pipeline stress and displacement analyses
8. Mechanical and electrical system documentation
9. Corrosion assessment
10. ~~9. Photographs, and/or sketches and supporting data shall be included to document typical conditions and referenced deficiencies, and to justify the assessment ratings CARs and the remedial action priorities (RAPs) assigned.~~
10. ~~Condition assessment rating (CAR) report and supporting data~~
11. ~~Remedial action priorities (RAP) report and supporting data~~

Rationale:

Based on public comment, the Commission staff has become aware that the originally proposed changes to the first paragraph did not properly convey the intent, by mistakenly implying that the audit team leader would be required to sign and stamp all documentation. Therefore, the proposed language is amended by

reinstating the first sentence in the existing code and adding a second sentence regarding the requirements for signing and stamping each report, drawing or document.

Additionally, in response to public comment, the proposed “MOT” modification in the third paragraph is reverted back to the existing code language of “*berthing system*”, since the original terminology is more precise in conveying that audits and inspections are performed on berthing systems.

Finally, in the fourth paragraph, the qualifier “*Example*” is added as this was an inadvertent omission.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

37a. 3103F.5.2.3 Static wind loads on vessels. ~~The “Prediction of Wind and Current Loads on VLCCs”~~ “Mooring Equipment Guidelines (MEG3)” [3.13] or the “British Standard Code of Practice for Maritime Structures” [3.14] shall be used to determine the wind loads for all tank vessels.

...

Rationale:

Based on public comment, the Commission staff acknowledges that the 1997 OCIMF “Mooring Equipment Guidelines” (2nd Ed.) was superseded by the 2008 OCIMF “Mooring Equipment Guidelines (MEG3)” (3rd Ed.), and that the 1977 OCIMF “Prediction of Wind and Current Loads on VLCCs” is now incorporated in MEG3 as Appendix A. Therefore, the proposed language is changed to reflect this.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

38. 3103F.6.1 General.

Berthing loads are quantified in terms of transfer of kinetic energy of the vessel into potential energy dissipated by the fender(s). The terms and equations below are based on those in UFC 4-152-01, "Piers and Wharves" [3.26]. ~~An alternate procedure is presented in and PIANC [3.27].~~

...

The following correction factors shall be used to modify the actual energy to be absorbed by the fender system for berthing operations:

$$E_{fender} = \cancel{F_a} F_A \cdot C_b \cdot C_m \cdot E_{vessel} \quad (3-16)$$

where:

E_{fender} = Energy to be absorbed by the fender system

$\cancel{F_a} F_A$ = Accidental factor accounting for abnormal conditions such as human error, malfunction, adverse environmental conditions or a combination of these factors. For existing berthing systems, $\cancel{F_a} F_A$ may be taken as 1.0. For new berthing systems, $\cancel{F_a} F_A$ shall be determined in accordance with UFC Section 4-152-01 [3.26] or PIANC Section 4.2.8 [3.27].

C_b = Berthing Coefficient

C_m = Effective mass or virtual mass coefficient (see Section 3103F.6.6)

...

Rationale:

During the 45-day public comment period, the Commission staff discovered that the symbol " F_a " is already utilized in the code for site coefficients in Table 31F-3-5. Therefore, the symbol for accidental factor is modified to " F_A ".

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

39. 3103F.6.7 Berthing velocity and angle.

...
 The berthing velocity, normal to berth, shall be in accordance with Table 31F-3-9, for existing berths. Site condition is determined from Table 31F-3-10.—For new berths, the berthing velocity, V_n , is established according to Table 4.2.1 of the PIANC guidelines [3.27].

Subject to Division approval, if an existing MOT can demonstrate lower velocities by utilizing velocity monitoring equipment, then such a velocity may be used temporarily until the berthing system is compliant with this Code.

...

**TABLE 31F-3-9
 BERTHING VELOCITY V_n (NORMAL TO BERTH)¹**

VESSEL SIZE (dwt DWT)	TUG-BOAT ASSISTANCE	SITE CONDITIONS		
		Unfavorable	Moderate	Favorable
$\leq < 10,000$ ^{2†}	No	1.31 ft/sec	0.98 ft/sec	0.53 ft/sec
$\leq 10,000-50,000$	Yes	0.78 ft/sec	0.66 ft/sec	0.33 ft/sec
50,000—100,000	Yes	0.53 ft/sec	0.39 ft/sec	0.26 ft/sec
$\geq > 100,000$	Yes	0.39 ft/sec	0.33 ft/sec	0.26 ft/sec

¹ For vessel sizes not shown, interpolation between velocities may be used.

~~2.1. If tug boat is used for vessel size smaller than 10,000 DWT the berthing velocity may be reduced by 20%.~~

...

**TABLE 31F-3-11
 MAXIMUM BERTHING ANGLE**

VESSEL SIZE (DWT)	ANGLE [degrees]
Barge	15
<10,000	10
10,000-50,000	8
> 50,000	6

Rationale:

Based on public comment, the Commission staff has become aware that footnote 2 for Table 31F-3-9 is no longer appropriate with the changes made in the table for vessel sizes smaller than 10,000 DWT; therefore, the proposed modification is the removal of footnote 2.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

43. **3103F.10 Mooring hardware (N/E).** ~~Marine Mooring hardware consists of~~ shall include but not be limited to bollards, quick release hooks, other mooring fittings and base bolts. All mooring fittings shall be clearly marked with their safe working loads [3.130] (N). The certificate issued by the manufacturer normally defines the allowable safe working loads of this hardware.

~~All mooring hardware, anchorage and supporting structures including individual hooks or bollards, shall be rated to withstand the minimum breaking load (MBL) of the strongest line required for the governing vessel configuration, using a Safety Factor of 1.2 or greater (N). All mooring hardware anchorage and supporting structures shall be capable of supporting the rated safe working load of the entire mooring hardware configuration without additional safety factor.~~

Rationale:

Based on public comment, the Commission staff has become aware that the originally proposed express term stated new “(N)” and existing “(E)” requirements within the same paragraphs and that this may lead to confusion; therefore, the proposed title is amended to include “(N/E)”.

In the second sentence, the reference number is superseded by “[3.13]” for consistency with changing the 1997 OCIMF “Mooring Equipment Guidelines” (2nd Ed.) to the 2008 OCIMF “Mooring Equipment Guidelines (MEG3)” (3rd Ed.) throughout the code. And “(N)” is added at the end of the sentence to clarify the intent.

Finally, in response to public comment, the proposed language (in the second paragraph) for mooring hardware, anchorage and support structures is modified to better articulate the Commission staff’s intent and to ensure the safe design and evaluation of mooring systems. The proposed changes provide precision and clearly define the safety factor requirements. This maintains the principal that mooring lines are the weakest component in a mooring system.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

44. **3103F.10.1 Quick release hooks.** For new MOTs or ~~B~~berthing ~~S~~systems, a minimum of three quick-release hooks are required for each breasting line location for tankers ~~larger greater than or equal to 50,000 DWT.~~ At least two hooks at each location shall be provided for breasting lines for tankers less than 50,000 DWT. Remote release may be considered for emergency situations.

~~All hooks and supporting structures shall withstand the minimum breaking load (MBL) of the strongest line with a safety factor of 1.2 or greater. Only one mooring line shall be placed on each quick release hook (N/E).~~

~~For multiple quick release hooks, the minimum horizontal load for the design of the tie-down shall be:~~

$$F_d = 1.2 \times MBL \times [1 + 0.75(n - 1)] \quad (3-21)$$

~~F_d = Minimum factored demand for assembly tie-down.~~

~~n = Number of hooks on the assembly.~~

~~The capacity of the supporting structures must be larger than F_d (See Section 3107F.4.3).~~

Rationale:

Based on public comment, the Commission staff has become aware that the quick-release hook requirements for new MOTs warrant further evaluation, and therefore, the qualifiers “breasting” are replaced, reverting back to the existing code language.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

44a. 3103F.12 Symbols.

...

F_a, F_v = Site coefficients from Tables 31F-3-5 and 31F-3-6

F_A = Accidental factor accounting for abnormal conditions

...

Rationale:

During the 45-day public comment period, the Commission staff discovered that the symbol for accidental factor “ F_A ” was omitted from Section 3103F.12. The proposed language corrects this error.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

44b. 3103F.13 References.

...

~~[3.13] Oil Companies International Marine Forum (OCIMF), 1977, “Prediction of Wind and Current Loads on VLCCs,” London, England.~~

[3.13] Oil Companies International Marine Forum (OCIMF), 2008, “Mooring Equipment Guidelines (MEG3),” 3rd ed., London, England.

...

~~[3.30] Oil Companies International Marine Forum (OCIMF), 1997, “Mooring equipment Guidelines,” 2nd ed., London, England.~~

Rationale:

Based on public comment, the Commission staff acknowledges that the 1997 OCIMF “Mooring Equipment Guidelines” (2nd Ed.) was superseded by the 2008 OCIMF “Mooring Equipment Guidelines (MEG3)” (3rd Ed.), and that the 1977 OCIMF “Prediction of Wind and Current Loads on VLCCs” is now incorporated in MEG3 as Appendix A. The proposed reference numbers are changed to reflect this.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

45. **3104F.2.1 Design earthquake motions.** Two levels of design seismic performance shall be considered. These levels are defined as follows:

...

Level 2 Seismic Performance:

- *Controlled inelastic structural behavior with repairable damage*
- *Prevention of structural collapse*
- *Temporary loss of operations, restorable within months*
- *Prevention of major spill (≥ 1200 bbls)*

Rationale:

Based on public comment, the Commission staff has become aware that the change proposed during the 45-day public comment period created inadvertent problems. The original intent of this change was to dispel concerns regarding the seismic performance standards for MOTs with low oil exposure. However, this performance standard is necessary to define an upper bound of possible spill scenarios. Therefore, the proposed language is amended by reinstating the existing code.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

51. **3104F.87 References.**

...

[4.5] CalARP Program Seismic Guidance Committee, ~~January 2004~~ September 2009, "Guidance for California Accidental Release Prevention (CalARP) Program Seismic Assessments," Sacramento, CA.

Rationale:

Based on public comment, the Commission staff acknowledges that the latest version of the "Guidance for California Accidental Release Prevention (CalARP) Program Seismic Assessments" was released in September 2009. Therefore, the proposed language is changed to reflect this.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

52. ~~3105F.1.3 Mooring/berthing requirements risk classification. Each MOT shall be assigned a mooring/berthing risk classification of high, medium or low, as determined from Table 31F-5-1, based on the following site-specific parameters:~~

- ~~1. Wind~~
- ~~2. Current~~
- ~~3. Hydrodynamic effects of passing vessels~~
- ~~4. Change in vessel draft~~

~~Exceedance of any of the defined condition thresholds in Table 31F-5-1 places the MOT in the appropriate mooring/berthing risk classification.~~

~~The maximum wind, V_w , (corrected for duration, height and over water) and maximum current, V_c , shall be obtained (see Section 3103F.5).~~

~~In order to determine if there are significant potential passing vessel effects on moored vessels at an MOT, see Section 3105F.3.2.~~

~~The range of vessel draft shall be based on the local tidal variation and the operational limits of the vessels berthing at the MOT.~~

~~Multiple berth MOTs shall use the same conditions for each berth unless it can be demonstrated that there are significant differences.~~

~~MOTs with high mooring/berthing risk classifications (Table 31F-5-1) shall have the following equipment in operation:~~

- ~~1. An anemometer (N/E),~~
- ~~2. A current meter in high velocity current (>1.5 knots) areas (N/E) (may be omitted if safety factor according to Section 3103F.5.3.1 is applied to current) and~~
- ~~3. Remote reading tension load devices in high velocity current (>1.5 knots) areas and/or with passing vessel effects (N) for new MOTs~~
- ~~4. Mooring hardware in accordance with Section 3103F.10 (N/E)~~

~~5. Berthing systems shall be in accordance with Section 3105F.4 (N/E)~~

Rationale:

Based on public comment, the proposed language is modified by making the berthing systems statement a standalone sentence, since it was incorrectly listed as an equipment requirement.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

54. **3105F.1.4 New MOTs.** Quick release hooks are required at all new MOTs, except for spring line fittings. Quick release hooks shall be sized, ~~within normal allowable stresses, for the safe working load of the largest size mooring line and configuration in accordance with Section 3103F.10.~~ To avoid accidental release, the freeing mechanism shall be activated by a two-step process. Quick release hooks shall be insulated electrically from the mooring structure, and ~~should~~ shall be supported so as not to contact the deck.

~~Section 3105F.5 and the OCIMF guidelines [5.4] shall be used in designing the mooring layout. For berths susceptible to passing vessel effects, an underkeel clearance of minimum of 4 ft at low water shall be provided to account for vessel trim and tidal variations [5.1].~~

Rationale:

Based on public comment, the Commission staff has become aware that the quick-release hook requirements for new MOTs warrant further evaluation, and therefore, the spring line exception is replaced, reverting back to the existing code language.

In response to public comment, the Commission staff acknowledges that the codification of underkeel clearance requirements for new MOTs warrant further evaluation, and therefore, the final sentence is removed.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code, Sections 8670.2 and 8670.2(m), Government Code

55. **3105F.1.5 Analysis and design of mooring components.** 2nd paragraph

The analysis and design of mooring components shall be based on the loading combinations and safety factors defined in Sections 3103F.8 through 3103F.10, and in accordance with ACI 318 [5.12], AISC [5.23] and ANSI/AF&PA NDS [5.34], as applicable.

Rationale:

The proposed language is modified to reflect the renumbering of references in Section 3105F, as a result of changes made to other Express Terms in response to public comment.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

56. 3105F.2 Mooring analyses. 2nd paragraph

Two procedures, manual and numerical are available for performing mooring analyses. These procedures shall conform to either the OCIMF documents, “Mooring Equipment Guidelines (MEG3)” [5.4]–[5.5] and “Prediction of Wind and Current Loads on VLCCs” [5.56] or the Department of Defense “Mooring” document [5.675]. The manual procedure (Section 3105F.2.1) may be used for barges.

Rationale:

Based on public comment, the Commission staff acknowledges that the 1997 OCIMF “Mooring Equipment Guidelines” (2nd Ed.) was superseded by the 2008 OCIMF “Mooring Equipment Guidelines (MEG3)” (3rd Ed.), and that the 1977 OCIMF “Prediction of Wind and Current Loads on VLCCs” is now incorporated in MEG3 as Appendix A. Therefore, the proposed references are changed to reflect this. Additionally, the proposed language is modified to reflect the renumbering of references in Section 3105F, as a result of changes made to Express Terms in response to public comment.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

57. 3105F.2.1 Manual procedure. ~~For MOTs classified as Low risk (Table 31F-5-1), Ssimplified calculations may be used to determine the mooring forces for barges with Favorable site conditions (see Table 31F-3-10) and no passing vessel effects (see Section 3105F.3.2), except if any of the following conditions exist (Figures 31F-5-2 and 31F-5-3, below).~~

...

Rationale:

Based on public comment, the proposed language is amended to provide a link to the passing vessel section.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

59. 3105F.3.2 Passing vessels. 4th and 5th Paragraphs.

~~When such conditions (1, 2 and 3 above) exist, the surge and sway forces and the yaw moment acting on the moored vessel shall, as a minimum, be established in accordance with Section 3103F.5.5 or by dynamic analysis. If the demands from such evaluation are greater than 75 percent of the mooring system capacity (breaking strength of mooring lines), then a more sophisticated dynamic analysis is required.~~

For MOTs located in ports, the passing distance, L, may be established based on channel width and vessel traffic patterns. The guidelines established in the Department of Defense UFC 4-150-06, Figure 5-17 [5.786] for interior channels may be used. The “vertical bank” in Figure 5-17 of [5.786] shall be replaced by the side of the moored vessel when establishing the distance, “L”.

Rationale:

The proposed language is modified to reflect the renumbering of references in Section 3105F, as a result of changes made to other Express Terms in response to public comment.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

60. 3105F.3.3 Seiche. 2nd Paragraph and Items 1 & 3 in the 3rd Paragraph.

The standing wave system or seiche is characterized by a series of “nodes” and “antinodes”. Seiche typically has wave periods ranging from 20 seconds up to several hours, with wave heights in the range of 0.1 to 0.4 ft [5.796].

...

1. *Calculate the natural period of oscillation of the basin. The basin may be idealized as rectangular, closed or open at the seaward end. Use Chapter 2 of UFC 4-150-06 [5.786], to calculate the wave period and length for different modes. The first three modes shall be considered in the analysis.*

...

3. *Determine the natural period of the vessel and mooring system. The calculation shall be based on the total mass of the system and the stiffness of the mooring lines in surge. The surge motion of the moored vessel is estimated by analyzing the vessel motion as a harmonically forced linear single degree of freedom spring mass system. Methods outlined in a paper by F.A. Kilner [5.897] can be used to calculate the vessel motion.*

...

Rationale:

The proposed language is modified to reflect the renumbering of references in Section 3105F, as a result of changes made to other Express Terms in response to public comment.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

61. 3105F.4 Berthing analysis and design. ~~*In general and for new MOTs, the fender system alone shall be designed to absorb the berthing energy. For existing MOTs, the berthing analysis may include the fender and structure.*~~

The analysis and design of berthing components shall be based on the loading combinations and safety factors defined in Sections 3103F.8 and 3103F.9 and in accordance with ACI 318 [5.12], AISC [5.23], and ANSI/AF&PA NDS [5.34], as applicable.

Rationale:

The proposed language is modified to reflect the renumbering of references in Section 3105F, as a result of changes made to other Express Terms in response to public comment.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

62. 3105F.4.3.1 Continuous fender system.

...
The contact length, L_c can be approximated by the chord formed by the curvature of the bow and the berthing angle as shown in Equation 5-2 below.

$$L_c = 2r \cos \sin \alpha \quad (5-2)$$

where:

L_c = contact length
 r = Bow radius
 α = Berthing Angle

...
In lieu of detailed analysis to determine the contact length, Table 31F-5-21 may be used. The contact length for a vessel within the range listed in the table can be obtained by interpolation.

Rationale:

Based on public comment, the Commission staff has become aware that the utilization of Equation 5-2 warrants further evaluation, and therefore, the “*sin*” is replaced, reverting back to the existing code language.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

66. 3105F.4.5 Design and selection of new fender systems. For guidelines on new fender designs, refer to the Department of Defense “Piers and Wharves” document (UFC 4-152-01 [5.9408] and the PIANC Guidelines for the Design of Fenders Systems: 2002 [5.4049]. Also see Section 3103F.6.

Rationale:

The proposed language is modified to reflect the renumbering of references in Section 3105F, as a result of changes made to other Express Terms in response to public comment.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

67. 3105F.5 Layout of new MOTs. 4th Paragraph

For a preliminary layout, the guidelines in the British Standards, Part 4, Section 2 [5.11210], may be used in conjunction with the guidelines below.

Rationale:

The proposed language is modified to reflect the renumbering of references in Section 3105F, as a result of changes made to other Express Terms in response to public comment.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

68. 3105F.7 References

- ~~[5.1] Gaythwaite, John, 1990, "Design of Marine Facilities for the Berthing, Mooring and Repair of Vessels," Van Nostrand Reinhold.~~
- [5.12] American Concrete Institute, ACI 318-05, 2005, "Building Code Requirements for Structural Concrete (318-05) and Commentary (318R-05)," Farmington Hills, Michigan.
- [5.23] American Institute of Steel Construction Inc. (AISC), 2005, "Steel Construction Manual," Thirteenth Edition, Chicago, IL.
- [5.34] American Forest & Paper Association, 2005, "National Design Specification for Wood Construction," ANSI/AF&PA NDS-2005, Washington, D.C.
- [5.45] Oil Companies International Marine Forum (OCIMF), ~~1997~~ 2008, "Mooring Equipment Guidelines (MEG3)," ~~2nd~~ 3rd Ed., London, England.
- ~~[5.56] Oil Companies International Marine Forum (OCIMF), 1977, "Prediction of Wind and Current Loads on VLCCs," London, England.~~
- [5.675] Department of Defense, 3 October 2005, "Moorings," Unified Facilities Criteria (UFC) 4-152-03, Washington D.C., USA.
- [5.786] Department of Defense, 12 December 2001, "Military Harbors and Coastal Facilities," Unified Facilities Criteria (UFC) 4-150-06, Washington D.C., USA.
- [5.897] Kilner F.A., 1961, "Model Tests on the Motion of Moored Ships Placed on Long Waves." Proceedings of 7th Conference on Coastal Engineering, August 1960, The Hague, Netherlands, published by the Council on Wave Research - The Engineering Foundation.
- [5.9408] Department of Defense, 28 July 2005, "Piers and Wharves," Unified Facilities Criteria (UFC), 4-152-01, Washington D.C., USA.
- [5.10449] Permanent International Association of Navigation Congresses (PIANC), 2002, "Guidelines for the Design of Fender Systems: 2002," Brussels.
- [5.114210] British Standards Institution, 1994, "British Standard Code of Practice for Maritime Structures - Part 4. Code of Practice for Design of Fendering and Mooring Systems," BS6349, London, England.

Rationale:

As a result of modifications made in response to public comment for Express Term #54, the proposed language removes reference [5.1]. Additionally, the Commission staff acknowledges that the 1997 OCIMF "Mooring Equipment Guidelines" (2nd Ed.) was superseded by the 2008 OCIMF "Mooring Equipment Guidelines (MEG3)" (3rd Ed.), and that the 1977 OCIMF "Prediction of Wind and Current Loads on VLCCs" is now incorporated in MEG3 as Appendix A. Therefore, the proposed reference numbers are changed to reflect this.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

74. 3108F.3.2 Emergency shutdown systems. *An essential measure of fire prevention is communications in conjunction with the emergency shutdown. The ESD and isolation system shall conform to 2 CCR 2380 (h) [8.3] and 33 CFR 154.550 [8.6]. An ESD system shall include or provide:*

1. *An ESD valve, located near the dock manifold connection or loading arm (N/E).*
2. *ESD valves, with “Local” and “Remote” actuation capabilities (N).*
3. *Remote actuation stations strategically located, so that ESD valve(s) may be shut within required times (N).*
4. *Multiple actuation stations installed at strategic locations, so that one such station is located more than 100 feet from areas classified as Class I, Group D, Division 1 or 2 [8.7]. Actuation stations shall be wired in parallel to achieve redundancy and arranged so that fire damage to one station will not disable the ESD system (N).*
5. *Communications or control circuits to synchronize simultaneous closure of the shore isolation valves (SIVs) with the shutdown of loading pumps (N).*
6. *A manual reset to restore the ESD system to an operational state after each initiation (N).*
7. *An alarm to indicate failure of the primary power source (N).*
8. *A secondary (emergency) power source (N).*
9. *Periodic testing of the system (N/E).*
10. *Fire proofing of motors and control-cables that are installed in areas classified as Class I, Group D, Division 1 or 2 [8.7]. Fire proofing shall, at a minimum, comply with the recommendations of API Publication 2218 (see Section 6 of [8.8]) (N/E).*

Rationale:

Based on public comment, the Commission staff has become aware that fire proofing of motors and control-cables warrant further evaluation, and therefore, item #10 is reverted back to the existing code language with the elimination “/E”.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

75. **Table 31F-8-2.**

**TABLE 31F-8-2
FIRE HAZARD CLASSIFICATIONS**

CLASS	STORED VOLUME (bbbl)			FLOWING VOLUME (bbbl)		CRITERIA (bbbls)*
	Stripped	V _{SL}	V _{SH}	V _{FL}	V _{FH}	
LOW	y	n	n	y	y	$V_{FL} \geq V_{FH}$ and $V_T \leq 1200$
LOW	n	y	n	y	n	$V_{SL} + V_{FL} \leq 1200$
MEDIUM	n	n	y	n	y	$V_{SH} + V_{FH} \leq 1200$
MEDIUM	y	n	n	y	y	$V_{FH} > V_{FL}$ and $V_T \leq 1200$
MEDIUM HIGH	n	n	y	n	y	$V_{SH} + V_{FH} > 1200$
HIGH	y	n	n	y	y	$V_T > 1200$
HIGH	n	y	y	y	y	$V_T > 1200$
HIGH	n	y	n	y	n	$V_{SL} + V_{FL} > 1200$
HIGH	n	n	y	n	y	$V_{SH} + V_{FH} > 1200$

y = yes

n = no

Stripped = product purged from pipeline following product transfer event

V_{SL} = stored volume of low-hazard class product

V_{SH} = stored volume of high-hazard class product

V_{FL} = volume of low-hazard class product flowing through transfer line during 30 – 60 secs. ESD.

V_{FH} = volume of high-hazard class product flowing through transfer line during 30 – 60 secs. ESD.

V_T = V_{SL} + V_{SH} + V_{FL} + V_{FH} = Total Volume (stored and flowing)

* Quantities are based on maximum flow rate, including simultaneous transfers.

Rationale:

Based on public comment, the proposed language is amended with the removal of the fifth row, as this was a duplicate of the last row.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

76. 3108F.4 Fire detection. An MOT shall have a permanently installed automated fire detection or sensing system (N).

Fire detection systems shall be tested and maintained per the manufacturer or the local enforcing agency jurisdictional fire department requirements. Specifications shall be retained. The latest testing and maintenance records shall be retained readily accessible to the Division (N/E).

Rationale:

The proposed language in the first sentence of the second paragraph is modified to reflect comments received from the State Fire Marshal regarding the “enforcing agency” terminology. Based on public comment, the proposed language regarding records retention is clarified.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

77. **3108F.5 Fire alarms.** Add a third paragraph.

...
...

Fire alarms shall be tested and maintained in accordance with NFPA-72 [8.9] or the local enforcing agency-jurisdictional fire department requirements. Specifications shall be retained. The latest testing and maintenance records shall be retained readily accessible to the Division (N/E).

Rationale:

The proposed language is modified to reflect comments received from the State Fire Marshal regarding the “enforcing agency” terminology. Based on public comment, the proposed language regarding records retention is clarified.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

80. **3108F.6.3 Fire water.** The source of fire water should shall be reliable and provide sufficient capacity as determined in the fire plan-Fire Protection Assessment. Water-based fire protection systems shall be tested and maintained per NFPA 25 [8.10], as adopted and amended by the State Fire Marshal, or the local enforcing agency-jurisdictional fire department requirements. Records for all inspections and tests shall be retained. Specifications shall be retained. The latest testing and maintenance records shall be readily accessible to the Division (N/E).

...

Rationale:

The proposed language in the second sentence is modified to reflect comments received from the State Fire Marshal regarding the “as adopted and amended by the State Fire Marshal” and “enforcing agency” terminology. Based on public comment, the proposed language regarding records retention is clarified.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

86. 3109F.5.1 Valves and fittings. Valves and fittings shall meet the following requirements:

1. Conform to ASME B31.3 [9.2], ASME B 31.4 [9.3], API Standard 609 [9.89], and ASME B16.34 [9.910], as appropriate, based on their service (N).
2. Conform to Section 8 of [9.1] (N/E).
3. Stems shall be oriented in a way not to pose a hazard in operation or maintenance (N/E).
4. Non-ductile iron, cast iron, and low-melting temperature metals shall not be used in any hydrocarbon service, fire water, or foam service (N/E).
5. Double-block and bleed valves shall be used for manifold valves. (N/E).
6. Isolation valves shall be fire-safe, in accordance with API Standard 607 [9.4011] (N).
7. Swing check valves shall not be installed in vertical down-flow piping (N/E).
8. Pressure relief devices shall be used in any closed piping system that has the possibility of being over pressurized due to temperature increase (thermal relief valves) or surging (N/E).
9. Pressure relief devices shall be sized in accordance with API RP 520 [9.4412] (N). Set pressures and accumulating pressures shall be in accordance with [9.4412] (N/E).
10. Discharge from pressure relief valves shall be directed into lower pressure piping for recycling or proper disposal. Discharge shall never be directed into the open environment, unless secondary containment is provided (N/E).
11. Threaded, socket-welded, flanged and welded fittings shall conform to Section 8 of [9.1] (N/E).

Rationale:

Based on public comment, the Commission staff has become aware that reference to "ASME B31.3 [9.2]" was inadvertently omitted. Therefore, the proposed language includes this reference.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

87. 3109F.6 Utility and auxiliary piping systems. Utility and auxiliary piping includes service for:

...

Vapor return lines and VOC vapor inerting and enriching (natural gas) piping shall conform to 33 CFR 154.808 [9.4213], and API RP 1124 [9.4314] (N/E).

Firewater and foam piping and fittings shall meet the following requirements:

1. Conform to ASME B 16.5 [9.4415]
2. Fire mains shall be carbon steel pipe (N/E)
3. High density polyethylene (HDPE) piping may be used for buried pipelines (N/E)
4. Piping shall be color-coded (N/E)

Compressed air, venting and nitrogen piping and fittings shall conform to ASME B31.3 [9.2] (N). Utility and auxiliary piping shall have external visual inspections, equivalent similar to that defined in Section 10.1 of API 574 [9.16]. (N/E).

Rationale:

Based on public comment, the proposed language is amended to replace “*equivalent*” with “*similar*” and to add a specific section reference for API 574. These modifications are made for clarity.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

88. 3109F.7 References.

- [9.1] American Petroleum Institute (API), ~~1994-2005~~, API Standard 2610, “Design, Construction, Operation, Maintenance, and Inspection of Terminal and Tank Facilities,” ~~ANSI/API STD 2610-1994, 1st ed.~~ 2nd ed., Washington, D.C.
- [9.2] American Society of Mechanical Engineers (ASME), ~~1998-2010~~, ASME B31.3, “Process Piping,” New York.
- [9.3] American Society of Mechanical Engineers (ASME), ~~1998-2009~~, ASME B31.4, “Pipeline Transportation Systems For Liquid Hydrocarbons And Other Liquids,” New York.
- [9.4] ~~2 CCR 2550–2556, 2560 - 2571~~ (Title 2, California Code of Regulations (CCR), Sections ~~2550-2556, 2560-2571~~).
- [9.5] American Society of Mechanical Engineers (ASME), 2008, B31.E, “Standard for the Seismic Design and Retrofit of Above-Ground Piping Systems,” New York.
- [9.56] American Society of Civil Engineers, ~~1997-2011~~, “Guidelines for Seismic Evaluation and Design of Petrochemical Facilities,” ~~3rd ed.~~ 2nd ed., New York.
- [9.67] ~~CalARP Program Seismic Guidance Committee, January 2004~~ September 2009, “Guidance for California Accidental Release Prevention (CalARP) Program Seismic Assessments”, Sacramento, CA.
- [9.78] Federal Emergency Management Agency, Nov. 2000, FEMA 356, “Prestandard and Commentary for the Seismic Rehabilitation of Buildings”, Washington, D.C.
- [9.89] American Petroleum Institute (API), 1997, API Standard 609, “Butterfly Valves: Double Flanged, Lug- and Wafer-Type,” 5th ed., Washington, D.C.
- [9.910] American Society of Mechanical Engineers (ASME), 1996, ASME B16.34, “Valves Flanged Threaded And Welding End,” New York.
- [9.1011] American Petroleum Institute (API), 1996, API Standard 607, “Fire Test for Soft-Seated Quarter-Turn Valves,” 4th ed., 1993 (reaffirmed 4/1996), Washington, D.C.
- [9.1112] American Petroleum Institute (API), 2000, API RP 520, “Sizing, Selection, and Installation of Pressure-relieving Devices in Refineries, Part I – Sizing and Selection, 7th ed., and Part II – Installation, 2003, 5th ed., Washington, D.C.
- [9.1213] 33 CFR 1-54.808 – Vapor Control Systems, General (Title 33, Code of Federal Regulations (CFR), Section 1-54.808).

[9.1314] American Petroleum Institute (API), 1991, Recommended Practice 1124 (API_RP 1124), "Ship, Barge, and Terminal Hydrocarbon Vapor Collection Manifolds," 1st ed., Washington, D.C.

[9.4415] American Society of Mechanical Engineers (ASME), 1996, ASME B16.5, "Pipe Flanges and Flanged Fittings," New York.

[9.16] American Petroleum Institute (API), 2009, API RP 574, "Inspection Practices for Piping System Components," 3rd ed., Washington, D.C.

Rationale:

Based on public comment, the Commission staff acknowledges that the latest version of the "Guidance for California Accidental Release Prevention (CalARP) Program Seismic Assessments" was released in September 2009. Therefore, the proposed language is changed to reflect this. Additionally, the unintentional typographical error was corrected for the edition number for the ASCE guidance [9.56].

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

89. 3110F.9 Equipment & systems maintenance (N/E). Mechanical and electrical equipment and systems critical to oil spill prevention, such as, but not limited to: mooring line quick release and loading arm quick disconnect systems, shall be maintained and tested as per the manufacturer's recommendations (N/E). Specifications shall be retained (N). The latest Records shall be retained readily accessible to the Division (N/E).

Rationale:

Based on public comment, the proposed language regarding maintenance, testing and records retention is clarified.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

90. 3110F.10 Pumps (N/E). Specification information for all MOT pumps providing oil and fire water service to wharf pipeline systems shall be retained. Information shall include, but not be limited to pump make and model, motor make and model, flow rate, pressure rating, and pump performance curves.

All Hydrocarbon service pumps that serving wharf pipeline systems the oil transfer operations at the berthing system must be maintained per API 2610 [10.25]. All Firewater pumps providing the wharf fire protection shall be maintained per NFPA 25 [10.30], as adopted and amended by the State Fire Marshal, or local enforcing agency requirements.

Rationale:

Based on public comment, the proposed language regarding maintenance in accordance with API 2610 and NFPA 25 is clarified. The proposed language in the last sentence is modified to reflect comments received from the State Fire Marshal regarding the "as adopted and amended by the State Fire Marshal" and "local enforcing agency" terminology.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

92. 3110F.912 References.

...

[10.25] *American Petroleum Institute (API), 1994/2005, API Standard 2610, "Design, Construction, Operation, Maintenance, and Inspection of Terminal and Tank Facilities," ANSI/API STD 2610-1994, 1st 2nd ed., Washington, D.C.*

...

[10.27] *CalARP Program Seismic Guidance Committee, ~~January 2004~~ September 2009, "Guidance for California Accidental Release Prevention (CalARP) Program Seismic Assessments", Sacramento, CA.*

...

[10.30] *National Fire Protection Association, 2011, NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, Quincy, MA.*

...

Rationale:

Based on public comment, the Commission staff acknowledges that the latest version of the "Guidance for California Accidental Release Prevention (CalARP) Program Seismic Assessments" was released in September 2009. Therefore, the proposed language is changed to reflect this.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

98. 3111F.9.3 Monitoring systems (N/E). *All monitoring systems and instrumentation such as, but not limited to: velocity monitoring systems, tension monitoring systems, anemometers, and current meters, shall be installed, maintained and calibrated per the manufacturer's recommendations. Specifications shall be retained. The latest ~~Records shall be retained~~ readily accessible to the Division.*

Rationale:

During the 45-day public comment period, the Commission staff discovered that "installed" had been inadvertently omitted. Based on public comment, the proposed language regarding specifications and records retention is clarified.

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code

101. **3111F.11 Critical systems seismic assessment (N/E).** *Electrical power systems shall have a seismic assessment per Section 3104F.5.3. For equipment anchorages and supports, see Section 3110F.8.*

Rationale:

During the 45-day comment period, the Commission staff noticed an unintentional omission and corrected it by inserting "Section" before "3110F.8".

Authority: Section 8755 and 8757, Public Resources Code

Reference(s): Section 8750, 8751, 8755 and 8757, Public Resources Code