THE CURRENT STATUS OF MOTEMS IMPLEMENTATION

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California State Lands Commission
September 9, 2008
REGULATORY PROCESS

- APPROVED - CALIFORNIA STATE LANDS COMMISSION, AUGUST 17, 2004
- ADOPTED - CALIFORNIA BUILDING STANDARDS COMMISSION, JANUARY 19, 2005
- PUBLISHED - CALIFORNIA BUILDING STANDARDS CODE (TITLE 24, PART 2, VOL 1, CHAPTER 31F) AUGUST 6, 2005.
- EFFECTIVE FEBRUARY 6, 2006
- NEW EDITION SCHEDULED FOR LATE -2008
### FACILITY CLASSIFICATIONS (E)  
**INITIAL AUDIT DEADLINES**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Description</th>
<th>Due Date</th>
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<tbody>
<tr>
<td><strong>HIGH</strong></td>
<td>&gt;1200 Bbls at risk</td>
<td>August 6, 2008</td>
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<td>(30 Months)</td>
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<td><strong>MEDIUM</strong></td>
<td>&lt;1200 Bbls at risk or &gt; 90 transfers/year</td>
<td>February 6, 2010</td>
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<td>(48 Months)</td>
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<td><strong>LOW</strong></td>
<td>&lt; 1200 Bbls at risk, &lt; 90 transfers/year, &lt; 30,000 DWT</td>
<td>February 6, 2011</td>
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<td>(60 Months)</td>
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10 “HIGH RISK” FACILITIES HAVE SUBMITTED THEIR AUDITS (3-10 VOLUMES EACH)

NEW TERMINAL PROPOSED, BERTHS 408-409, PIER 400 (POLA) – USING MOTEEMS

CURSORY REVIEW OF SUBMITTED AUDITS

WHERE DO WE GO FROM HERE?
WHAT’S REQUIRED FOR THE AUDIT?
(MOTEEMS Section 3102F.3.8)

Background - Baseline inspection/drawings may be required

Inspection/testing data and report

Mooring/berthing analyses

Structural and seismic analyses

Geotechnical Analysis & Report
WHAT’S REQUIRED FOR THE AUDIT? (MOTEEMS Section 3102F.3.8)

- Pipeline Stress Analysis
- MOT Fire Plan & Risk Analysis
- Mechanical/Electrical Documentation
- Photographs/sketches/drawings
- Condition Assessment Ratings (CARs)
- Remedial Action Priorities (RAPs)
CONDITION ASSESSMENT RATINGS (CAR)

6 = GOOD - fit-for-purpose

5 = SATISFACTORY - fit-for-purpose

4 = FAIR - Marginal, capacity less than 15% degraded*

3 = POOR – Not fit-for-purpose*

2 = SERIOUS – Not fit-for-purpose*

1 = CRITICAL – Cease operations

* May require repair/rehabilitation to remain operational
COMPONENT REMEDIAL ACTION PRIORITIES (RAP)

- **P1** – Condition poses an immediate threat to public health, safety or the environment. Emergency action required*

- **P2** – Condition poses a potential threat to public health, safety and the environment – requires urgent action*

- **P3** – Upgrading required, no emergency or urgent action required

- **P4** – Fit-for-purpose, do the repairs during normal maintenance intervals

- **R** - Recommended action for good engineering or maintenance practice, but not required by these standards

* Berthing System NOT fit-for-purpose.
AUDIT REVIEW PROCESS

- AN INITIAL QUICK LOOK, NO MISSING DOCUMENTS OR OTHER GROSS INADEQUACY?

- A THOROUGH REVIEW, WITHIN MONTHS, EXCEPT FOR THE STRUCTURAL ANALYSIS/DESIGN

- A MEETING TO DISCUSS:
  
  P1 – P4 RAPs (REMEDIAL ACTION PRIORITIES)  
  CAR 6 – CAR 1 (CONDITION ASSESSMENT RATINGS)  

  SCHEDULING OF REHABILITATION  
  ERRORS/MISTAKES IN THE AUDIT
AUDIT REVIEW PROCESS

- DRAFT OF QUESTIONS/COMMENTS PROVIDED TO THE OPERATOR AND CONSULTANTS.
- UPDATES TO EXECUTIVE SUMMARIES – AT A SPECIFIED TIME INTERVAL.
- POSSIBLE LIMITATIONS ON OPERATIONS
- CARS – CONDITION ASSESSMENT RATINGS INCLUDE STRUCTURAL EVALUATIONS, ABOVE AND BELOW THE WATER LINE – FIT-FOR-PURPOSE?
- RAPS – REMEDIAL ACTION PRIORITIES – SOME MAY HAVE BEEN FIXED BY THE TIME WE COMPLETE OUR INITIAL REVIEWS.
AUDIT RESULTS - RAPs & CARs

- **Non-Seismic RAPs/CARs** – downgrade ops manual to be consistent until rehabilitated.

- **Seismic RAPs/CARs** – Schedule rehabilitation, maintain operations. We will not review preliminary analyses of structures that are inadequate. Will review new configuration/design.

- If seismic upgrade required, pipeline stress analysis will follow.
SOME RECENT ISSUES

- LIQUEFACTION POTENTIAL – UNDER OR LANDWARD OF THE WHARF FACE
- FIRE HAZARD ASSESSMENT AND RISK ANALYSIS (SECTION 3108F.2.1) - INCOMPLETE
- RECORD KEEPING – ORIGINAL DRAWINGS, AS-BUILT?
- QUALITY ASSURANCE – AUDIT CHECKED?
- WHAT IF THE U/W INSPECTION REVEALS MAJOR PROBLEMS?
As-built conditions, modifications of structural components, electrical/mechanical components, engineering analyses, etc. shall be maintained in chronological order, indexed and readily accessible to the Division (MFD).

(MOTEEMS 3102F.1.4 and 2 CCR Section 2320 (c) (2)).

Submit audit in hardcopy and electronic format and prepare a location to store everything, on-site PERMANENTLY!
Required on all MOTEMS audits, inspections, engineering analyses and design.

Prior to submission to MFD

Audits, inspections, analyses or evaluations of existing MOTs are subject to MFD review and approval

(MOTEMS Section 3101F.6.2)
Larger vessels (or double hull) – Mooring analysis required

Larger diameter pipelines or larger pump capacity – new P&IDs, stress analysis, increased hazards (different products)

A mooring incident or vessel impact damage (post-event audit)

Larger vessel arrival mass (DT) – berthing system OK?

A new underwater inspection or analysis – new findings
“SIGNIFICANT” INCIDENTS AND ACCIDENTS

- Hard berthing, vessel impact, passing vessel incident, fire, earthquake, etc.

- Subject to MOTEMS “post-event inspection”

- Can be initiated by the operator or by MFD.

- Requires an “Action Plan” – similar to a MOTEMS audit.

(MOTEMS 3102F.4)
MOTEMS UPDATES (LATE 2008)

- POLA/POLB TSUNAMI STUDY
- SF BAY TSUNAMI STUDY
- POLA/POLB RESPONSE SPECTRA
- PASSING VESSEL FORCES AND MOTION
- OTHER UPDATES
PLANNED REVISIONS MOTEMS 2009

- COMBINATION OF INERTIAL AND KINEMATIC LOADING ON PILES

- LEVEL III EARTHQUAKE AND PERFORMANCE REQUIREMENT OF “NON-COLLAPSE”

- SIMPLIFIED, APPROXIMATE SOLUTION TO DETERMINE THE CAPACITY/DEMAND OF PILE SUPPORTED WHARVES/PIERS
What if you find a major problem?

During the audit or pre-audit phase, what if you discover a CAR 1-3 or a RAP 1 or 2?

DON’T WAIT FOR THE AUDIT PROCESS

DON’T ANALYZE A PROBLEM IF NOT REQUIRED
(e.g. perform structural analysis on the rehabilitated configuration, not on the existing)

Not properly addressing, diagnosing or analyzing a problem could prove very costly.
ENJOY THE ENGINEERING TRACK 2A – 2E

MFD ENGINEERS WILL DO THEIR BEST TO HOST AND FACILITATE THESE SESSIONS.

SPECIAL THANKS TO THE MFD ENGINEERING STAFF:
AVI NAFDAY, HOSNY HAKIM, MIKE EDWARDS, KENDRA OLIVER AND JOHN FRECKMAN
WILL BE THINKING OF ALL OF YOU, WHILE SIPPING CAPPUCCINO AT THE PIAZZA SAN MARCOS, VENECEIA.

◆ CHAO AND MILLE GRATZIE FOR ATTENDING.
MOTEMS AND AUDIT MANUAL AVAILABLE

CSLC Website: www.slc.ca.gov

http://www.slc.ca.gov/Division_Pages/MFD/MOTEMS/MOTEMS_Home_Page.html