U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

NRC Webinar
San Onofre Nuclear Generating Station Final Enforcement Action and Follow-up Inspection Preliminary Results

March 25, 2019

NRC Region IV, Arlington, TX

NRC Region IV Presenters

- Linda Howell, Deputy Director
  Division of Nuclear Materials Safety

- Lee Brookhart, Senior Inspector, Team Leader
  Fuel Cycle and Decommissioning Branch
  Division of Nuclear Materials Safety

Agenda

Topic	Participants
Opening Remarks	Linda Howell
Final Enforcement Action	Linda Howell
NRC Follow up Inspection Activities	Lee Brookhart
Path Forward	Linda Howell
Questions and Answers/Discussion	All Webinar Participants Michael Bloodgood, Facilitator
Closing Remarks	Linda Howell

- Only in the event of technical difficulties with the webinar, a telephone bridge line will be used:
  - –Bridge Number: (800) 369-1771
  - –Passcode: 7382934
  - –Link to NRC Spotlight web page: https://www.nrc.gov/reactors/operating/ops-experience/songs-spec-insp-activities-cask-loading-misalignment.html

Predecisional Enforcement Conference

- Held on January 24, 2019

- Discussed two apparent violations, safety significance, root causes, and corrective actions

SIGNIFICANCE = "Severity Level"

SEVERITY LEVEL – I
(most significant regulatory concern)

SEVERITY LEVEL – II
(very significant regulatory concern)

SEVERITY LEVEL – III
(significant regulatory concern)

(Non-Escalated Enforcement)

SEVERITY LEVEL – IV
(less significant concern, but more than minor)

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Civil Penalty Assessment

- NRC Enforcement Policy Considers:
  - –Enforcement history
  - –Whether the licensee identified the issue
  - –Adequacy of corrective actions

Violation No. 1
Loss of Redundant Drop Protection Features

10 CFR 72.212(b)(3) requires, in part, that each cask used by the general licensee conforms to the terms, conditions, and specifications of a Certificate of Compliance. The spent fuel storage system's Certificate of Compliance requires that the canister be lifted and carried with redundant drop protection features to prevent uncontrolled lowering of the load.

Violation No. 1
Loss of Redundant Drop Protection Features

- Severity Level II Violation
- $116,000 Civil Penalty

Violation No. 2
Failure to Make Required Notification to NRC

10 CFR 72.75(d)(1) requires, in part, that each licensee notify the NRC within 24 hours after the discovery of events involving spent fuel in which important to safety equipment is disabled or fails to function as designed when required to mitigate the consequences of an accident and redundant safety equipment is not available.

Violation No. 2
Failure to Make Required Notification to NRC

- Severity Level III Violation
- No Civil Penalty

Licensee Response to NRC's Enforcement Action

Southern California Edison has three options:

- Accept the violations and pay civil penalty
- Deny the violation(s) or severity levels
- Protest civil penalty in whole or in part

NRC Follow-up Inspection Activities

- To Determine If:
  - –Root and contributing causes were understood
  - –Extent of condition and extent of cause were identified
  - –Corrective actions taken to preclude reoccurrence were effective

Licensee Causal Evaluations

Four causal evaluations performed by Licensee:

- Root Cause for Downloading Incident
- Apparent Cause to Assess Licensee's Oversight
- Common Cause Evaluation
- Root Cause for Reportability

NRC determined that the evaluations were of adequate depth and breadth; however, two weaknesses were identified.

Causal Evaluations Weaknesses

- Inadequate changes to Executive Oversight Board process

- Issues with Radiation Protection were not formally addressed in causal evaluations

Corrective Actions

- **From the Four Cause Evaluations:**
  - Total of 71 Corrective Actions
  - Total of 9 Corrective Actions to Preclude Repetition
  - Total of 8 Effectiveness Reviews

- **NRC Assessment:**

The corrective actions were comprehensive to address and prevent reoccurrence; however, six corrective action weakness were identified.

Corrective Actions

Subject Areas

- Procedures Changes
- Personnel Enhancements
- Equipment
- Training
- Corrective Action Program
- Demonstrations
- Reportability
- Special Inspection Follow-up Items

Procedures

- **Licensee made changes to spent fuel handling procedures**
  - Critical steps with specific criteria
  - Clearly defined personnel roles, responsibilities, and qualifications
  - Load monitoring equipment enhancements
  - Additional required personnel during downloading

Corrective Action Weaknesses

- Downloading Procedure
  - –Lacked contingency steps for equipment failures
  - –Incomplete criteria for suspending downloading operations
  - –Incomplete steps to maintain seismic qualifications during cask transport from fuel building to the storage pad

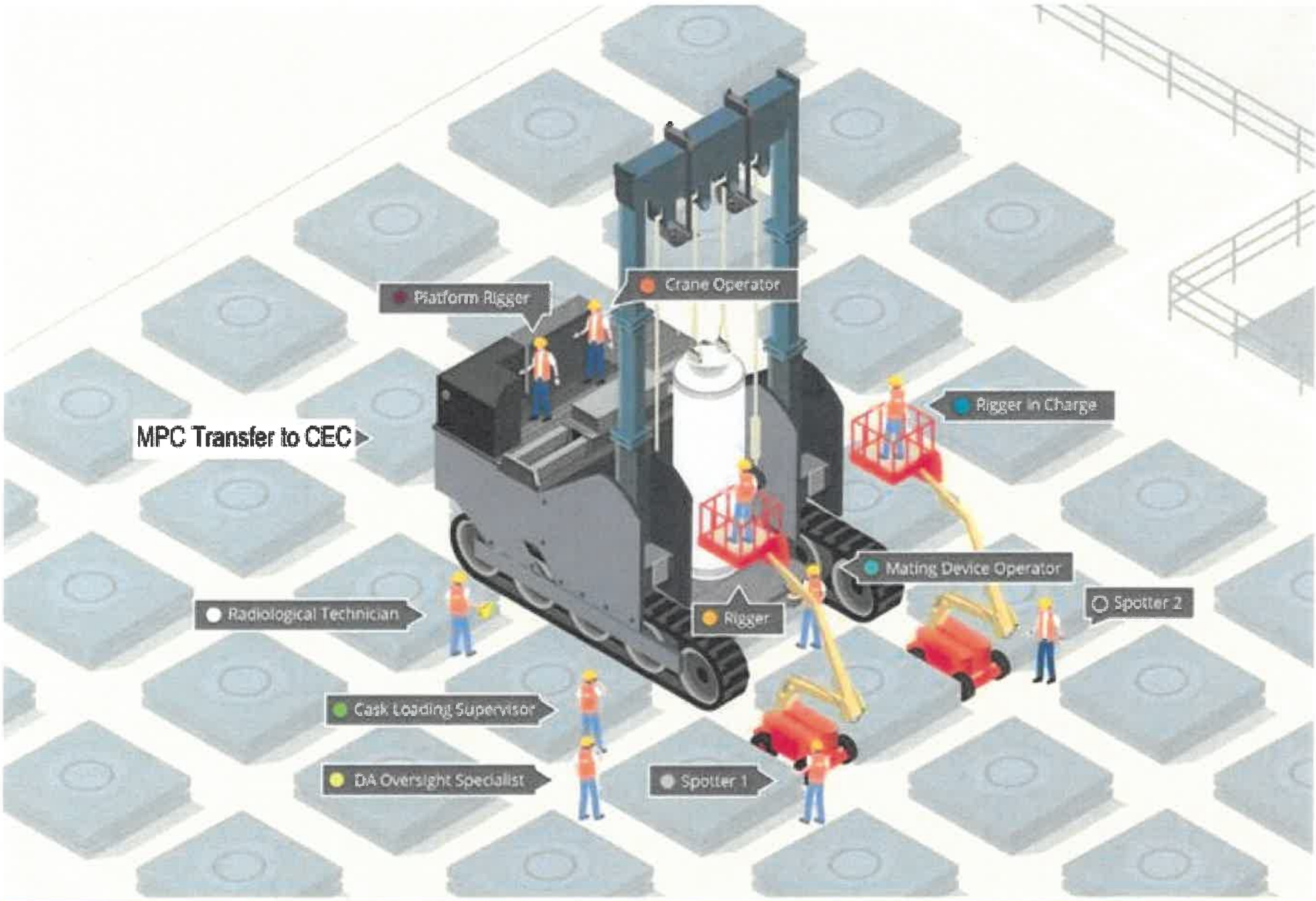
Personnel Enhancements

Previous Personnel on the Storage Pad

- Vertical Cask Transporter Operator
- Spotter in lift basket

Revised Personnel on the Storage Pad

- Vertical Cask Transporter Operator
- Vertical Cask Transporter Platform Rigger
- Rigger-in-Charge in lift basket
- 2nd Rigger in 2nd lift basket
- Cask Loading Supervisor
- Licensee Oversight Specialist
- Radiation Protection personnel
- Two Vertical Cask Transporter spotters
- Mating Device Operator



Revised Downloading Personnel

Rigger-in-Charge & 2nd Qualified Rigger

Load Indication Enhancements

Previous Monitoring

- Vertical Cask Transporter – Display Console
- Visual Observation

Revised Monitoring

- Load Sensing Devices (2)
- Tablet Computers
- Visual and Audible Alarms
- Camera and Video Display
- Vertical Cask Transporter – Display Console
- Visual Observation

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Load Information Displayed on Tablet

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Camera above Transfer Cask

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Corrective Action Weakness

- Improper classification of new equipment
  - Intermediate slings and devices
- Inadequate procurement of Important to Safety equipment
  - Load cell devices

Training

- Developed SONGS specific spent fuel training programs and training procedures
- Revised training program for SONGS Oversight Specialists
- Revised Corrective Action Program training
- Developed event notification training

Oversight

- Revised contractor oversight procedures
- Dedicated additional SONGS oversight personnel for contractors

NRC identified a weakness regarding maintenance procedure review

Corrective Action Program

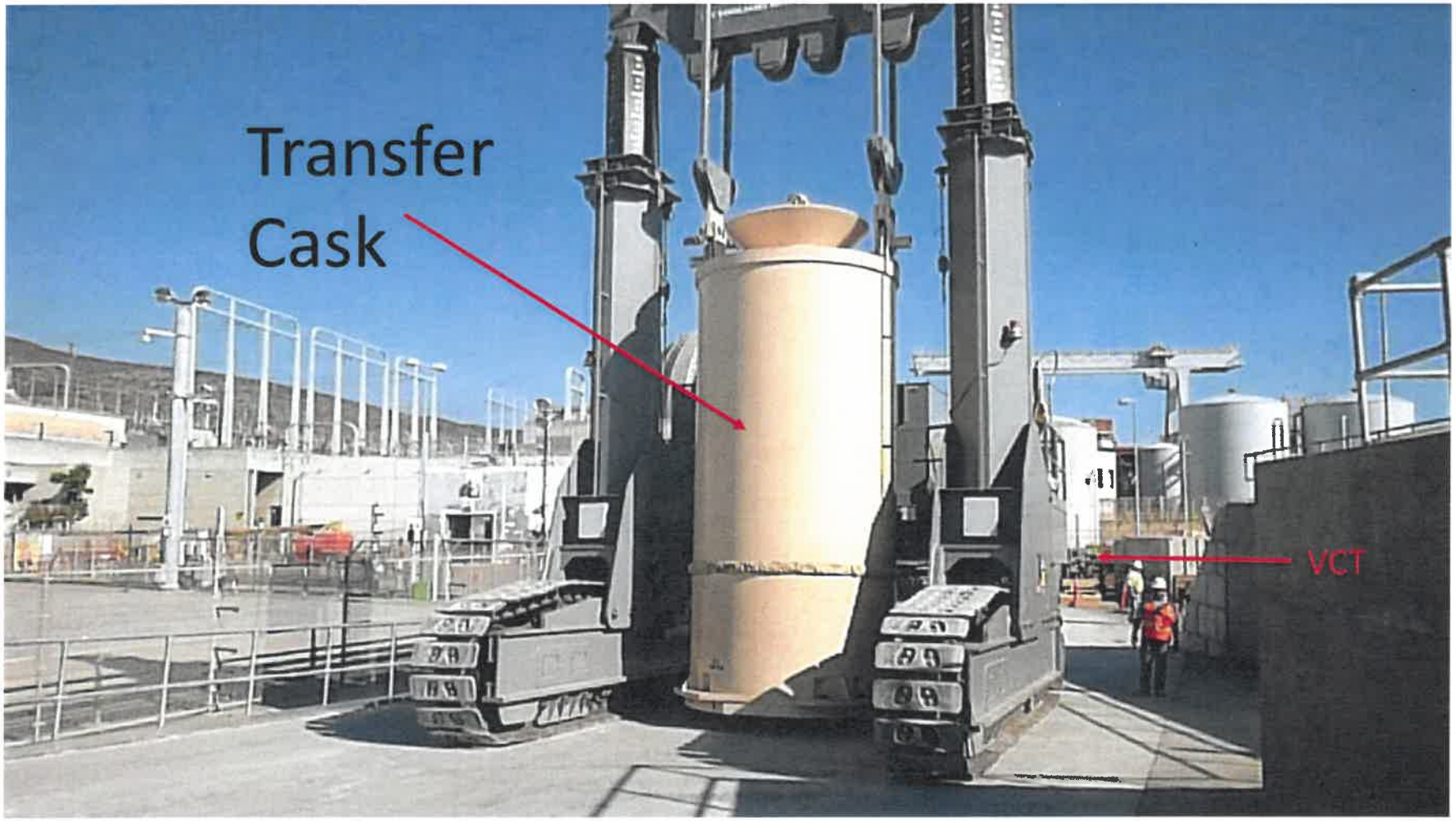
- Holtec project personnel work directly under SONGS Corrective Action Program
- Established a full-time Quality Assurance Manager Position
- Training conducted to emphasize use of a low-threshold for initiating corrective action process

Demonstrations Observed by NRC

- Demonstrated moving transfer cask from fuel building to storage pad
  - HI-PORT operations
  - Vertical cask transporter operations
- Demonstrated simulator canister downloading
- Demonstrated simulator canister uploading
- Demonstrated revised fuel building lifting operations

Transfer Cask on HI-PORT to Storage Pad

Vertical Cask Transporter Operations

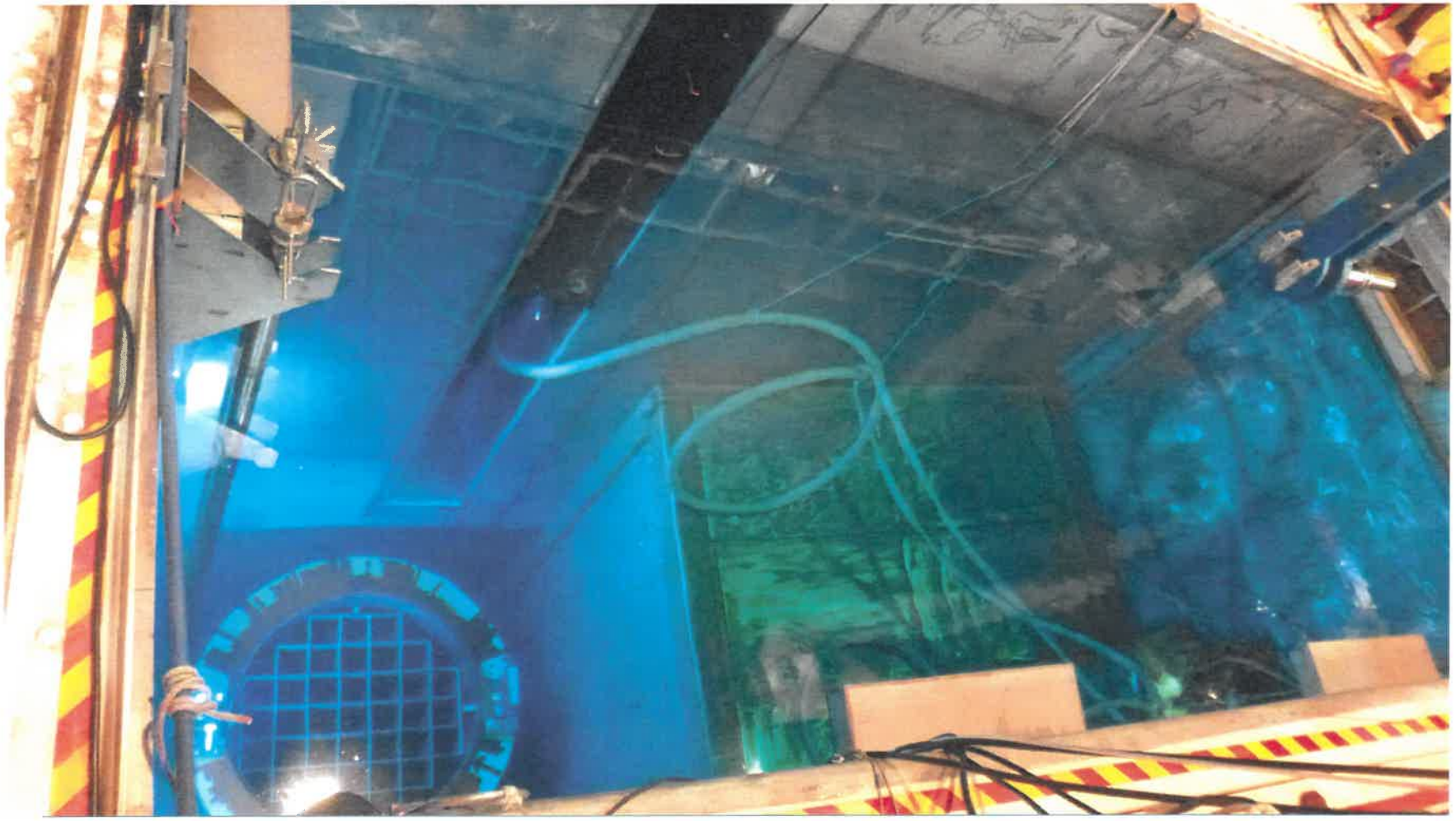


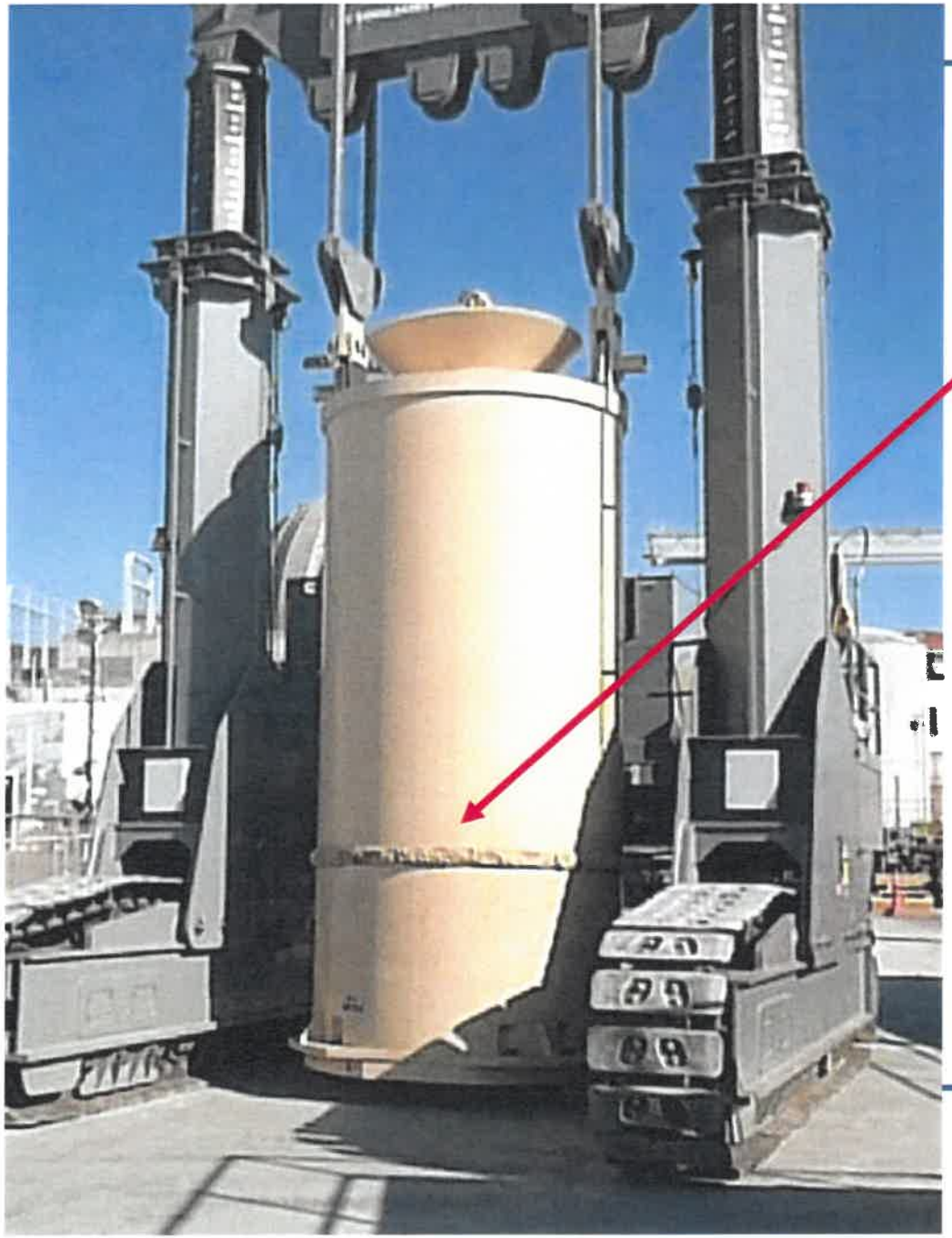
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Downloading

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Fuel Building Operations





Corrective Actions Weakness

- Removal of restraint band from HI-TRAC invalidated seismic analysis

Reportability

- Revised Notification Procedure to have a conservative bias
- Developed Reportability Training for Managers and Regulatory Affairs personnel
  - Identify reportable events
  - Identify Important to Safety components
  - Identify potential failures or deviations that require NRC notification
- Biennial Refresher Training

Special Inspection Follow-up Items

- Drop Evaluation
  - Canister integrity maintained
  - Fuel damage would likely occur
- Scratch Evaluation
  - Inadequate to support change to Final Safety Analysis Report
  - Several calculation errors

Path Forward

- Corrective actions implemented for causal factors and issues identified during Special Inspection
- Outstanding issue is the assessment of ongoing licensee analyses and process used to change the Final Safety Analysis Report (FSAR)
- Enhanced inspection oversight continues
- Licensee continues to suspend fuel loading operations until analysis is complete and NRC has reviewed the results

NRC Webinar
San Onofre Nuclear Generating Station

BREAK IN SESSION
RETURNING SHORTLY

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Questions and Comments
Facilitator: Michael Bloodgood

Participating via Webinar:

- Type your name, affiliation, and your question into the webinar QUESTION box. The facilitator will pose questions from the QUESTION box to the NRC presenters.

Present in Arlington, TX:

- Raise your hand to get the facilitator's attention. Please state your name and affiliation clearly into the microphone before posing your question or comment.

Feedback, Questions, and Comments

Post Webinar Feedback Link:
https://www.nrc.gov/public-involve/public-meetings.html

CONCLUSION OF WEBINAR