

## **U.S. Nuclear Regulatory Commission Public Meeting Summary**

November 14, 2018

**Title:** San Onofre Nuclear Generating Station Special Inspection Webinar

**Meeting Identifier:** Webinar #769-161-763

**Date of Meeting:** Thursday, November 8, 2018

**Location:** Webinar

**Type of Meeting:** Category 3

### **Purpose of the Meeting:**

The NRC hosted a virtual public meeting (webinar) to present preliminary observations regarding a special inspection at San Onofre Nuclear Generating Station. The special inspection was conducted to evaluate the August 3, 2018, incident involving a loaded spent fuel storage canister that was misaligned and became stuck on a flange while being lowered into a storage vault. Following the NRC's presentation, staff responded to questions about the inspection.

### **General Details:**

- Three NRC staff members participated in the webinar; approximately 10 staff members supported the webinar.
- Over 300 individuals participated in the webinar for various amounts of time.
- The meeting started at 2 pm CST and ended at approximately 5 pm CST.
- Three staff members gave a formal presentation that lasted approximately 30 minutes; after the presentation, the NRC answered questions for approximately 2½ hours.
- The public participants submitted approximately 500 questions before and during the webinar.
- The webinar was recorded and will be placed on the NRC website for public review when it is available.
- Answers to selected questions that were asked during the webinar will be placed on the NRC website.

### **Summary of Presentations:**

Three NRC staff members formally presented the details of the special inspection that was conducted at the San Onofre Nuclear Generating Station site from September 10-14, 2018. The formal presentation included a summary of the incident, including

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## MEETING AGENDA

ADAMS Accession ML18302A351)

October 29, 2018

Title: San Onofre Nuclear Generating Station (SONGS) Special Inspection Webinar

Date(s) and Time(s): November 08, 2018, 02:00 PM to 05:00 PM

Location: Webinar

Category: This is a Category 3 meeting. Public participation is actively sought for this meeting to fully engage the public in a discussion of regulatory issues.

Purpose: The U.S. Nuclear Regulatory Commission (NRC) will host a virtual public meeting (webinar) to present preliminary observations regarding a Special Inspection at SONGS. The Special Inspection was conducted to evaluate an August 3 incident involving a loaded spent fuel storage canister that was misaligned and became stuck on a flange while being lowered into a storage vault. Following the NRC's presentation, staff will respond to questions about the inspection.

Contact: Eric Simpson  
817-200-1553  
[eric.simpson@nrc.gov](mailto:eric.simpson@nrc.gov)

Participants: NRC  
Troy Pruett, DNMS Director, Region IV  
Linda Howell, DNMS Deputy Director,  
Region IV  
Eric Simpson, Health Physicist, Region IV  
Patricia Silva, Branch Chief DSFM, NRC  
Staff

Webinar:	<u>URL</u>	<u>Meeting Number</u>	<u>Password</u>
	<a href="https://attendee.gotowebinar.com/register/325663643729566723">https://attendee.gotowebinar.com/register/325663643729566723</a>	None	N/A

Docket No: 05000206  
05000361  
05000362  
07200041

Comments: Interested members of the public should register for the webinar via the internet address provided above. After registering, a confirmation email will be sent with details for joining the webinar. During the meeting, participants will be able to see and hear NRC staff on their computer or mobile device. There is also an option to join via phone bridge, but participants must register for the webinar to obtain the call-in number. Public participation will be supported in listen only mode. Meeting slides will be posted on the NRC's public meeting web page in advance. Additional information regarding the San Onofre Nuclear Generating Station Special Inspection can be found at:  
<https://www.nrc.gov/reactors/operating/ops-experience/songs-spec-insp-activities-cask-loading-misalignment.html>

## PUBLIC MEETING AGENDA

San Onofre Nuclear Generating Station (SONGS) Special Inspection Webinar

November 08, 2018, 02:00 PM to 05:00 PM

Webinar

<i><b>Time</b></i>	<i><b>Topic</b></i>	<i><b>Speaker</b></i>
2:00 PM - 5:00 PM	Opening Remarks and Introductions	Troy Pruett
2:00 PM - 5:00 PM	NRC Presentation	Troy Pruett Linda Howell Eric Simpson
2:00 PM - 5:00 PM	Questions and Discussions	All
5:00 PM	Closing Remarks	Troy Pruett

The time of the meeting is local to the jurisdiction where the meeting is being held.

The NRC provides reasonable accommodation to individuals with disabilities where appropriate. If reasonable accommodation is needed to participate in this meeting, or if a meeting notice, transcript, or other information from this meeting is needed in another format (e.g., Braille, large print), please notify the NRC meeting contact. Determinations on requests for reasonable accommodation will be made on a case-by-case basis.

ADAMS Accession Number: ML18302A351

Distribution:

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RidsOIMailCenter Resource	RidsRgn1MailCenter Resource	RidsRgn3MailCenter Resource
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Chris.Smith@nrc.gov	Bill.Masier@nrc.gov	Michael.Vasquez@nrc.gov
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Janet.Staub@nrc.gov	Dan.Hergenroder@nrc.gov	Michael.Bloodgood@nrc.gov
Michael.Layton@nrc.gov	Aida.Riven-Viztons@nrc.gov	Patricia.Silva@nrc.gov
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RADNMS_FCDB		

Name	JFKatanic	VLDricks	GMVasquez	WAMaier	TWPruett
Office	DNMS	ORA	ACES	RSLO	DNMS
Date	10/24/2018	10/25/2018	10/25/2018	10/25/2018	10/29/2018

OFFICIAL RECORD COPY

Link to meeting details: <https://www.nrc.gov/pmns/mtg?do=details&Code=20181145>

**PRESENTATION SLIDES DISTRIBUTED  
PRIOR TO THE MEETING**

**(ADAMS Accession ML18312A118)**



# **San Onofre Special Inspection Webinar**

**November 8, 2018  
NRC Region IV, Arlington, TX**



# Logistics

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- Webinar Format
- Back-up Bridge Line  
(888) 469-1677, Passcode 2471451
- Questions and Answers

## NRC Staff

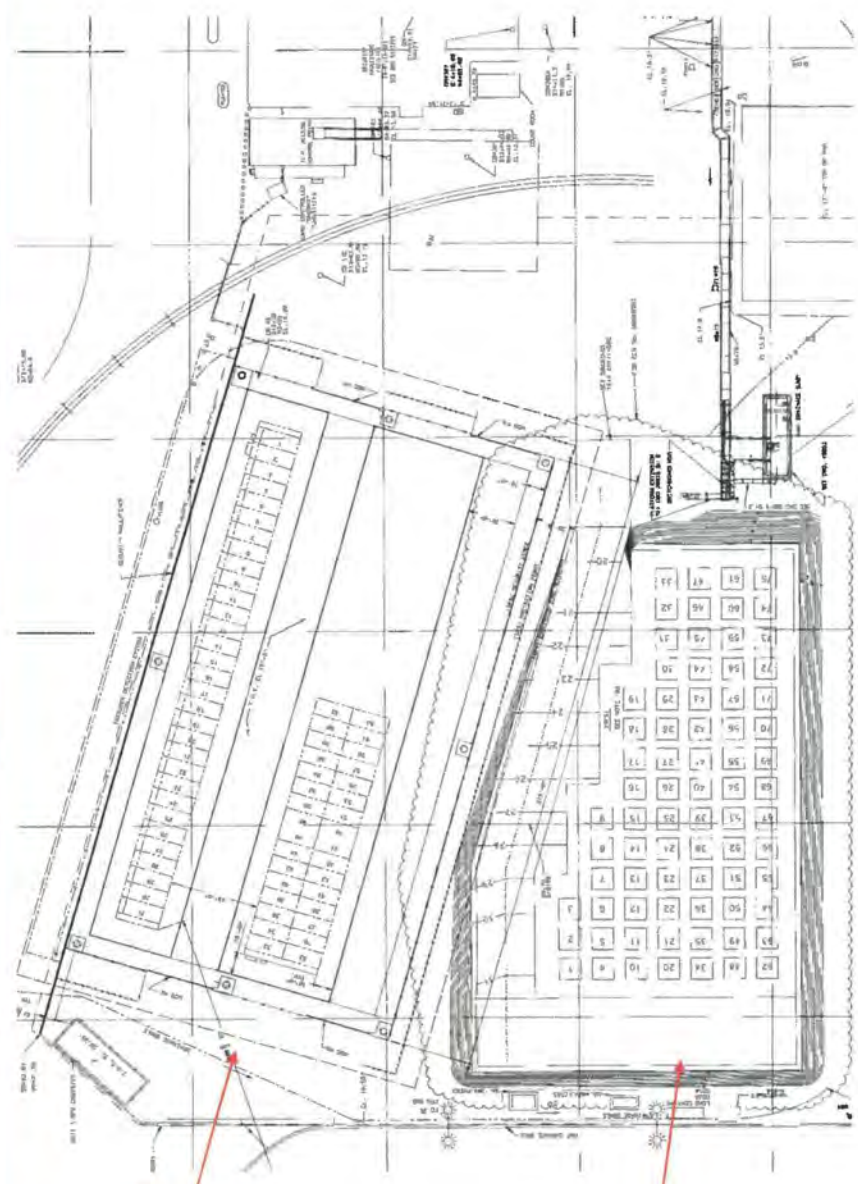
- 
- Eric Simpson, Special Inspection Team Leader  
Region IV Fuel Cycle and Decommissioning Branch
  - Patricia Silva, Branch Chief  
Division of Spent Fuel Management
  - Troy Pruett, Director  
Region IV Division of Nuclear Materials Safety

# Webinar Agenda

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- Background
- Canister Downloading Operations
- Inspection Team Findings
- Current Status
- Summary
- Questions & Answers

# ISFSI Layout



**TN**  
**NUHOMS**  
**Design**

**Holtec**  
**UMAX**  
**Design**

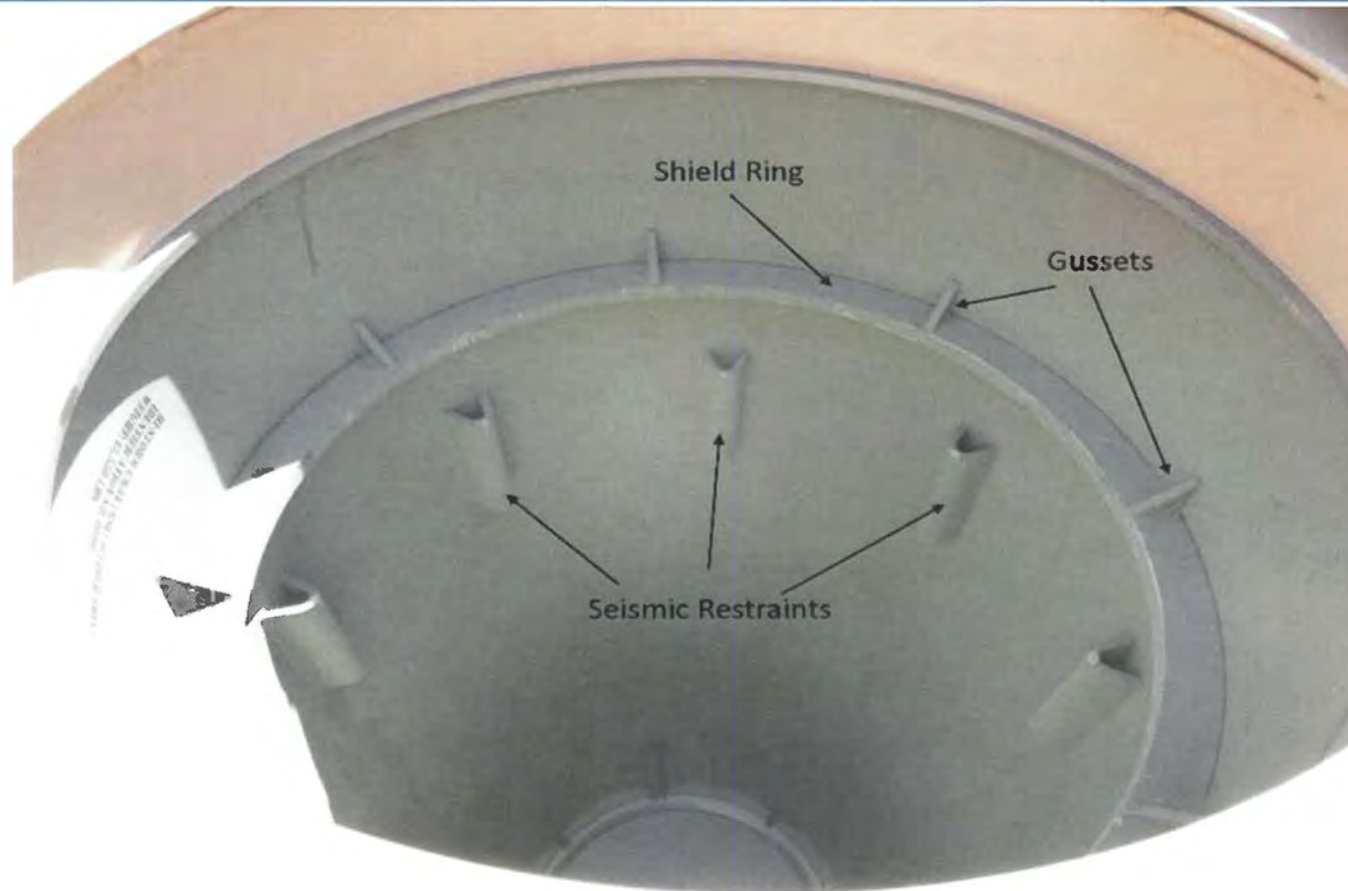
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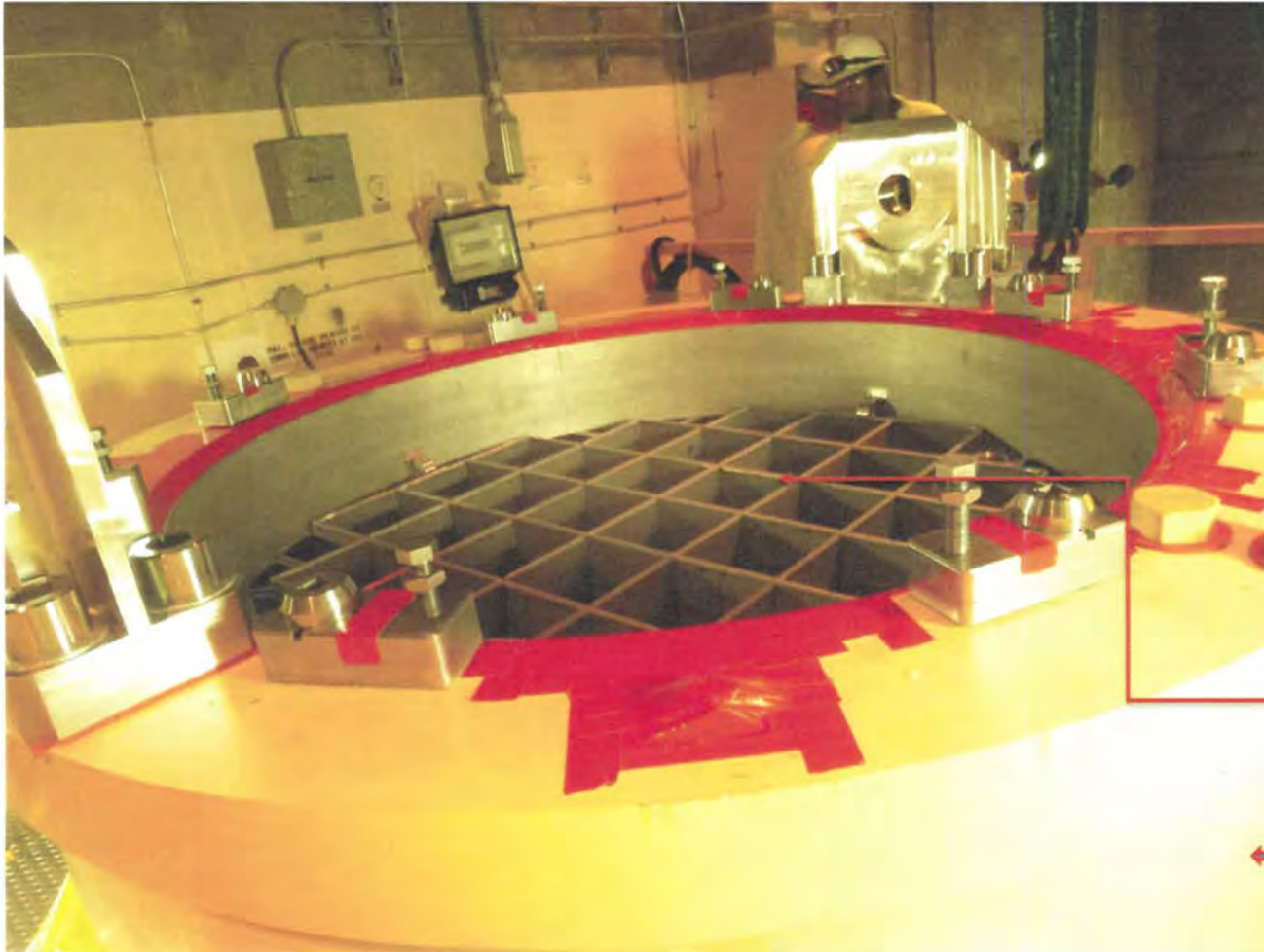


# Holtec UMAX



# Vertically Ventilated Module (Vault)





## Spent Fuel Canister

Holtec MPC

Transfer Cask



# Downloading: Shield Cone



# Downloading: Transporter



# Downloading: Vault Door



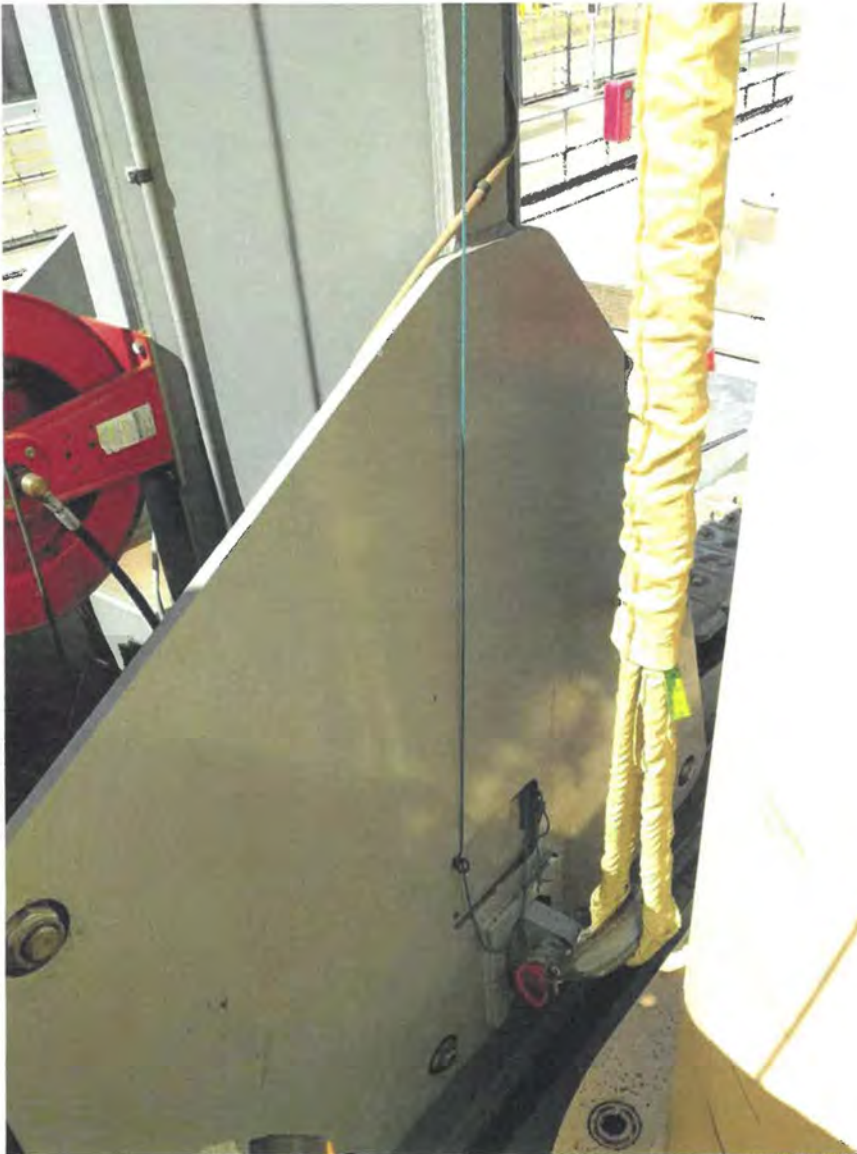


## Downloading: Alignment



## Downloading: Attaching Slings

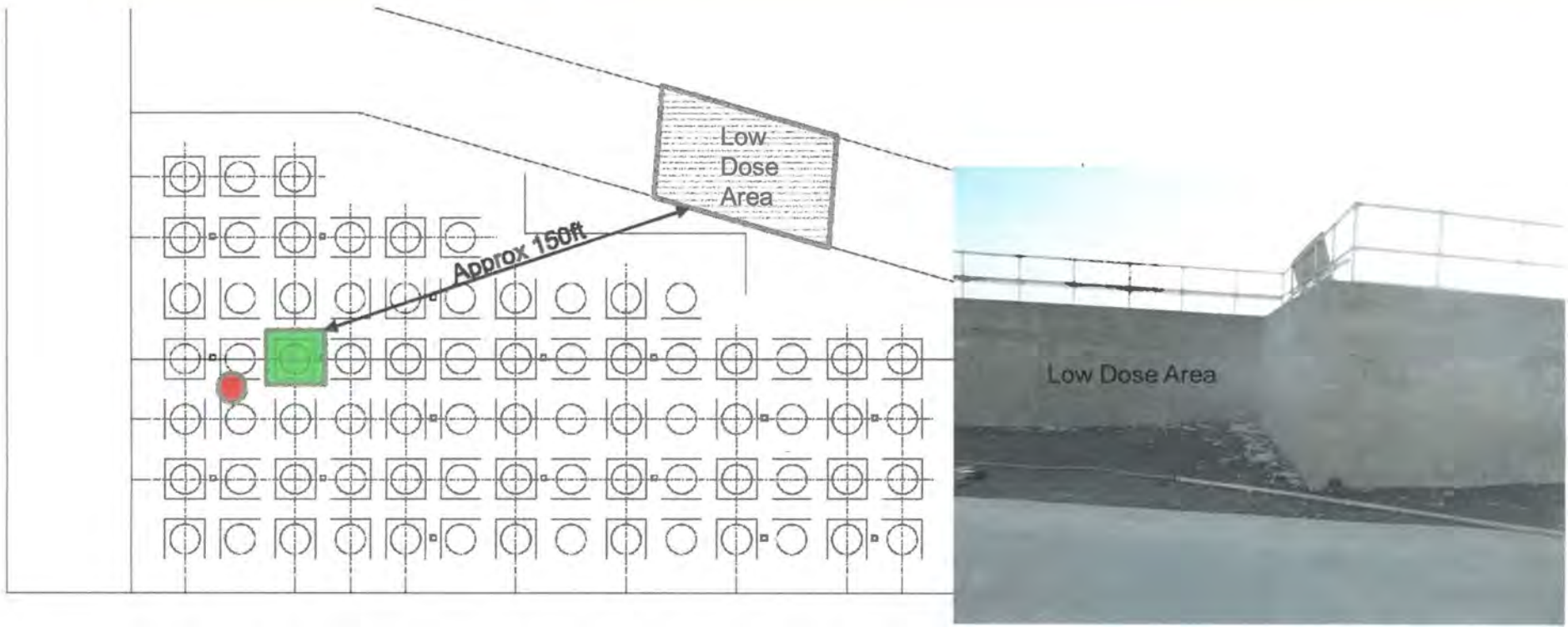
## Downloading: Attaching Slings





## Downloading Preparations

# What Happened on August 3rd?





# What Happened on August 3<sup>rd</sup>?



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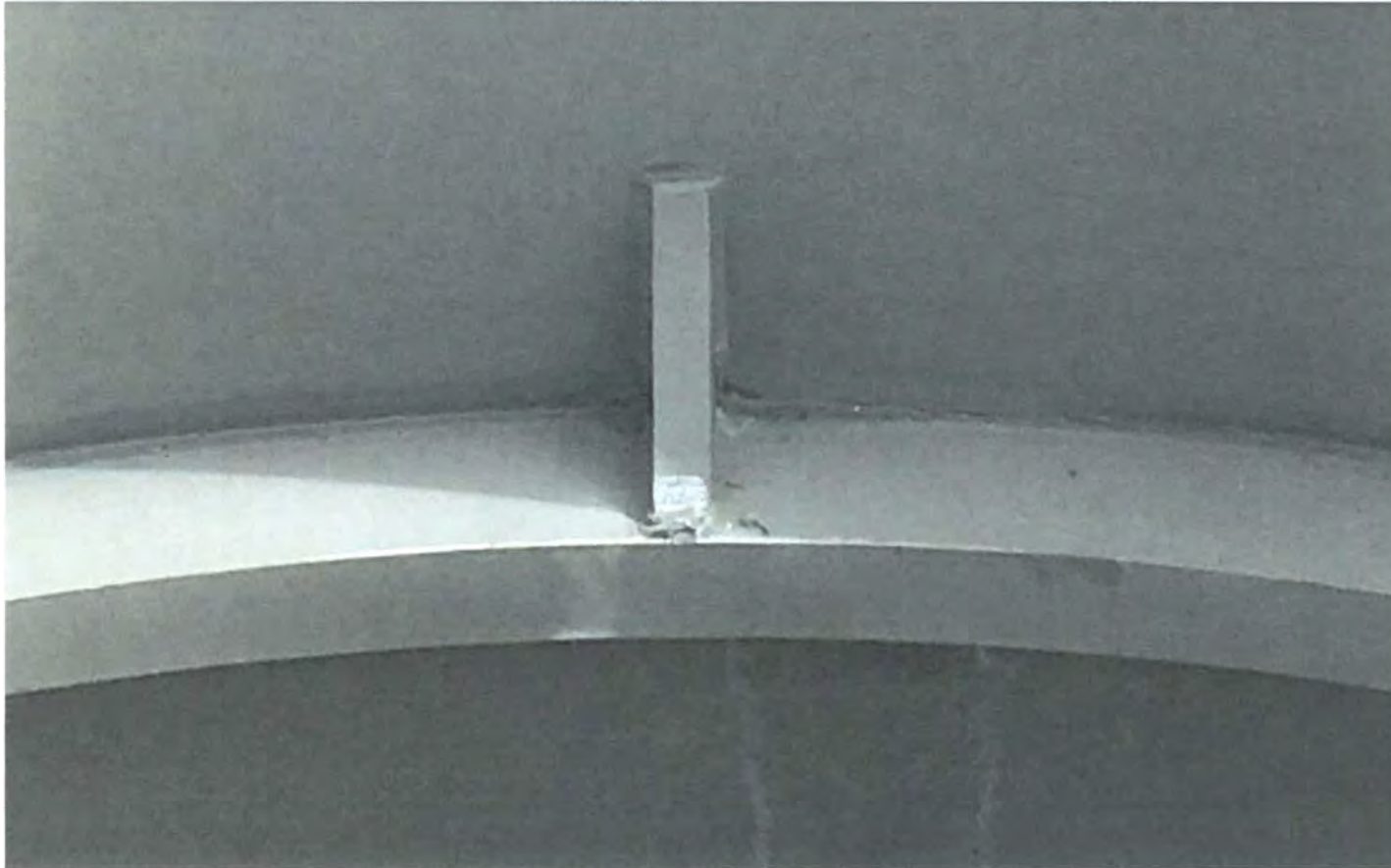
What  
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# What Happened on August 3rd?



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## Post Event Actions

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- Spent Fuel Handling Activities Suspended
- NRC Inspection Activities
- San Onofre Notification to NRC
- Causal Evaluations
- Corrective Actions

# Spent Fuel Handling Activities Suspended

---

- MPC 29 lowered into vault
- San Onofre suspends fuel loading
- MPC 30
  - Inside Transfer Cask
  - Seismically Restrained in Fuel Building

# NRC Inspection Activities

---

- August 6<sup>th</sup>: NRC Region IV informally notified of Misalignment Event and initiates daily oversight communications
- August 7<sup>th</sup>: San Onofre commits to NRC review before resuming operations
- August 17<sup>th</sup>: NRC decides to conduct Special Inspection
- September 10-14: NRC Special Inspection Team onsite
- NRC to perform inspection prior to resumption of fuel loading

# NRC Inspection Activities

---

- 2 Preliminary Escalated Findings
  - Failure to provide redundant drop protection
  - Failure to report
- 3 Preliminary Severity Level IV Violations
  - Procedures
  - Corrective actions
  - Training
- Management Oversight Weaknesses



# Causal Evaluations

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- San Onofre Apparent Cause Evaluation
- Holtec Root Cause Analysis
- Common Cause Evaluation

# Root Causes

- 
- San Onofre Management failed to provide
    - Adequate procedures
    - Adequate training to support procedure
    - Adequate oversight

## Corrective Actions

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- Training Requirements
- Procedure Enhancements
- Equipment Enhancements
- Oversight Improvements

# Event Significance

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- No Actual Drop of Canister
- No Radiological Release
- Load Drop Analysis (if canister fell)

## Next Steps

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- Issue NRC Inspection Report
- NRC Inspection of Causal Analyses
- NRC Inspection of Corrective Actions

# Summary

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- Could have been prevented
- Weaknesses in management oversight
- Multiple failed barriers
- Increased NRC oversight

# Questions

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**PRESENTATION SLIDES AS  
PRESENTED DURING MEETING  
(ADAMS Accession ML18318A064)**





# **San Onofre Special Inspection Webinar**

**November 8, 2018  
NRC Region IV, Arlington, TX**

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(888) 469-1677, Passcode 2471451
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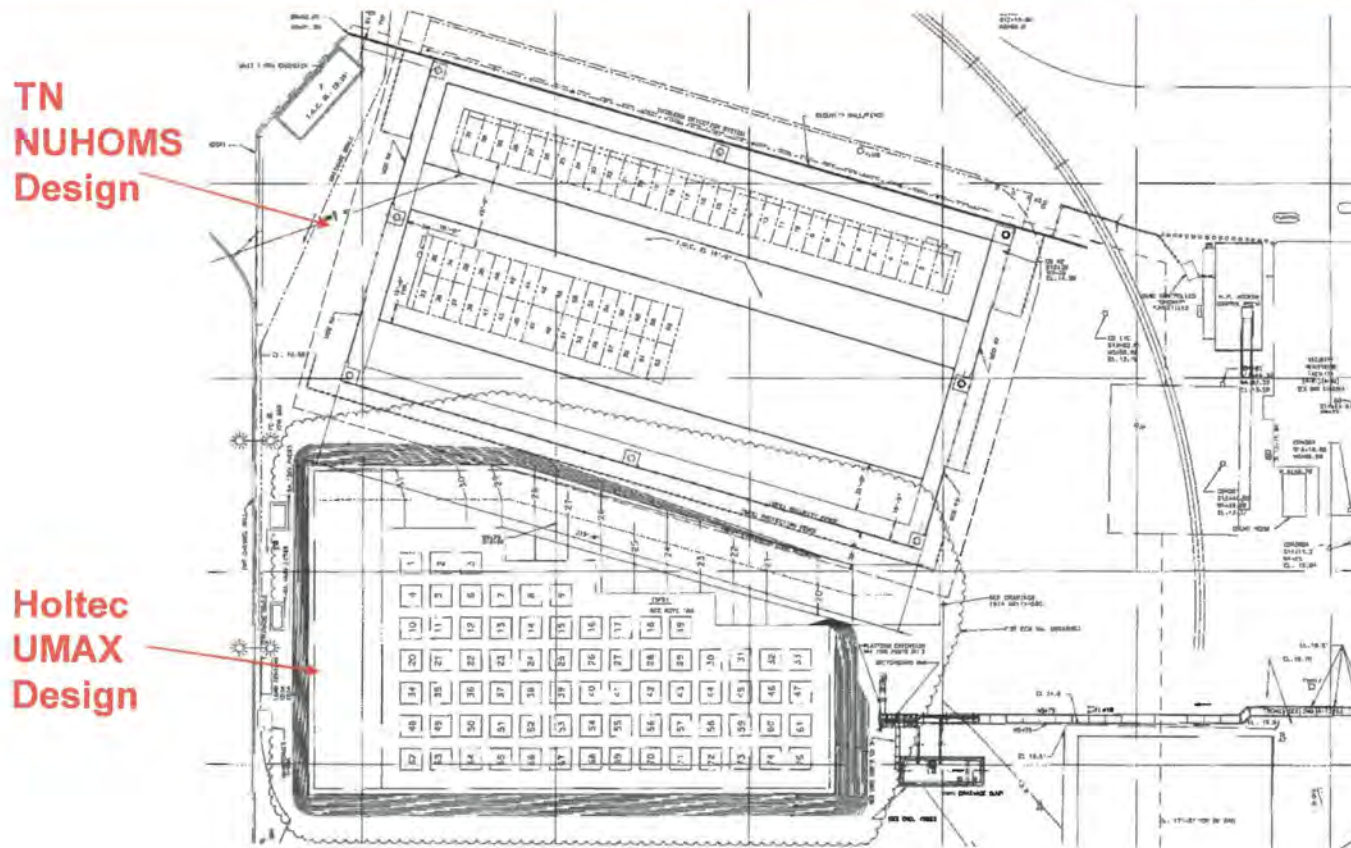
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# ISFSI Layout



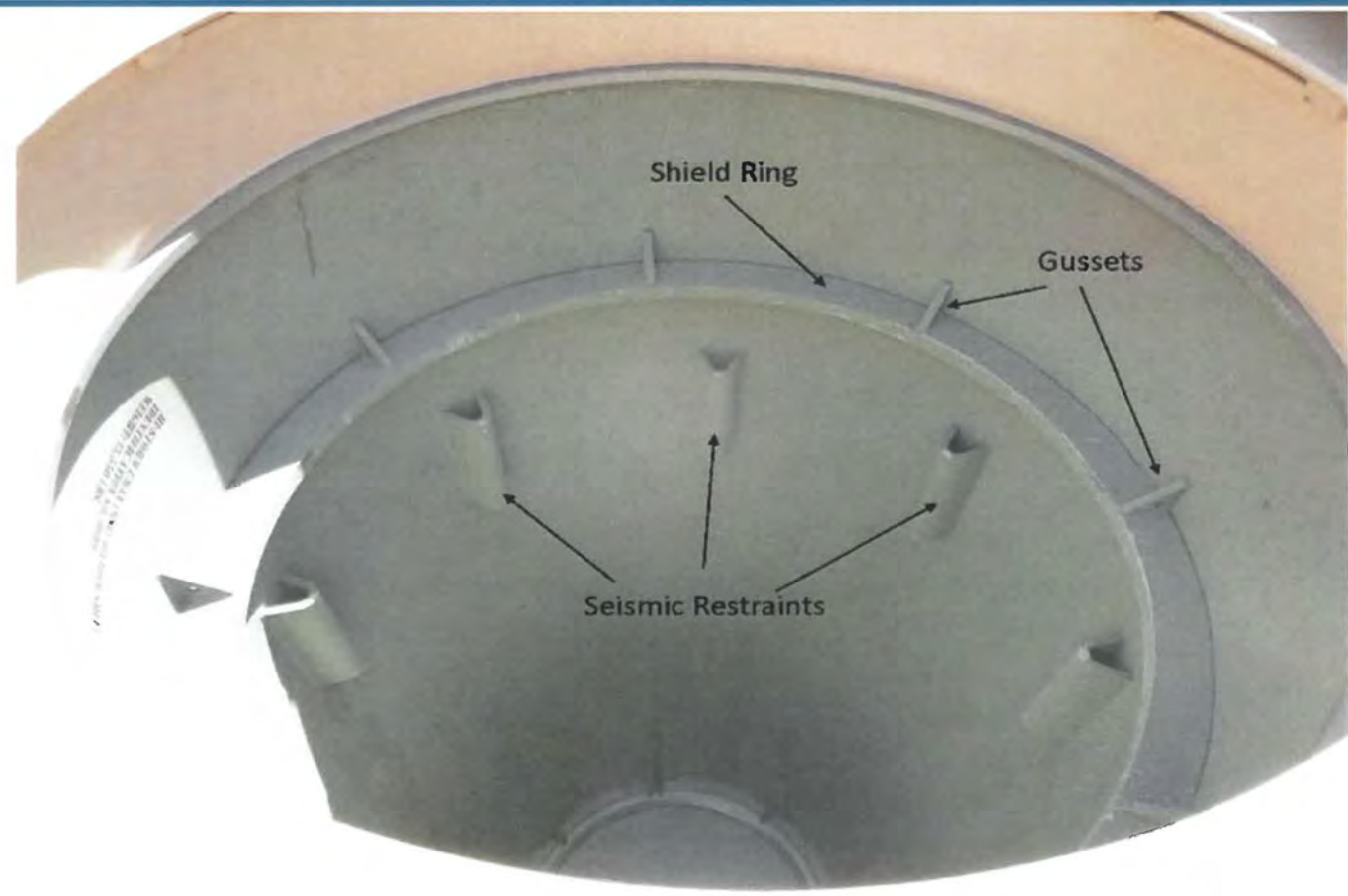
# Transnuclear NUHOMS



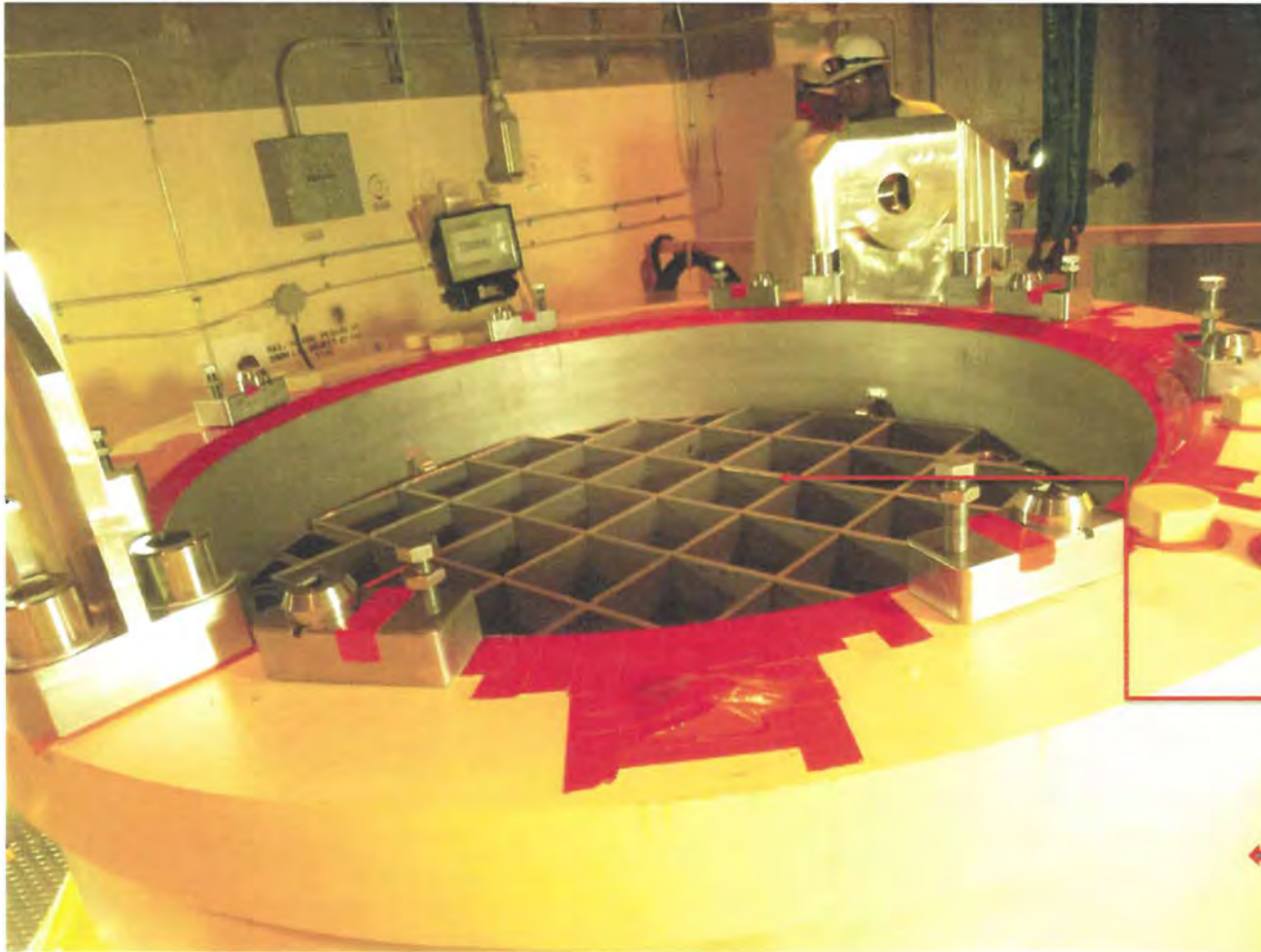
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Downloading:  
Alignment



## Downloading: Attaching Slings

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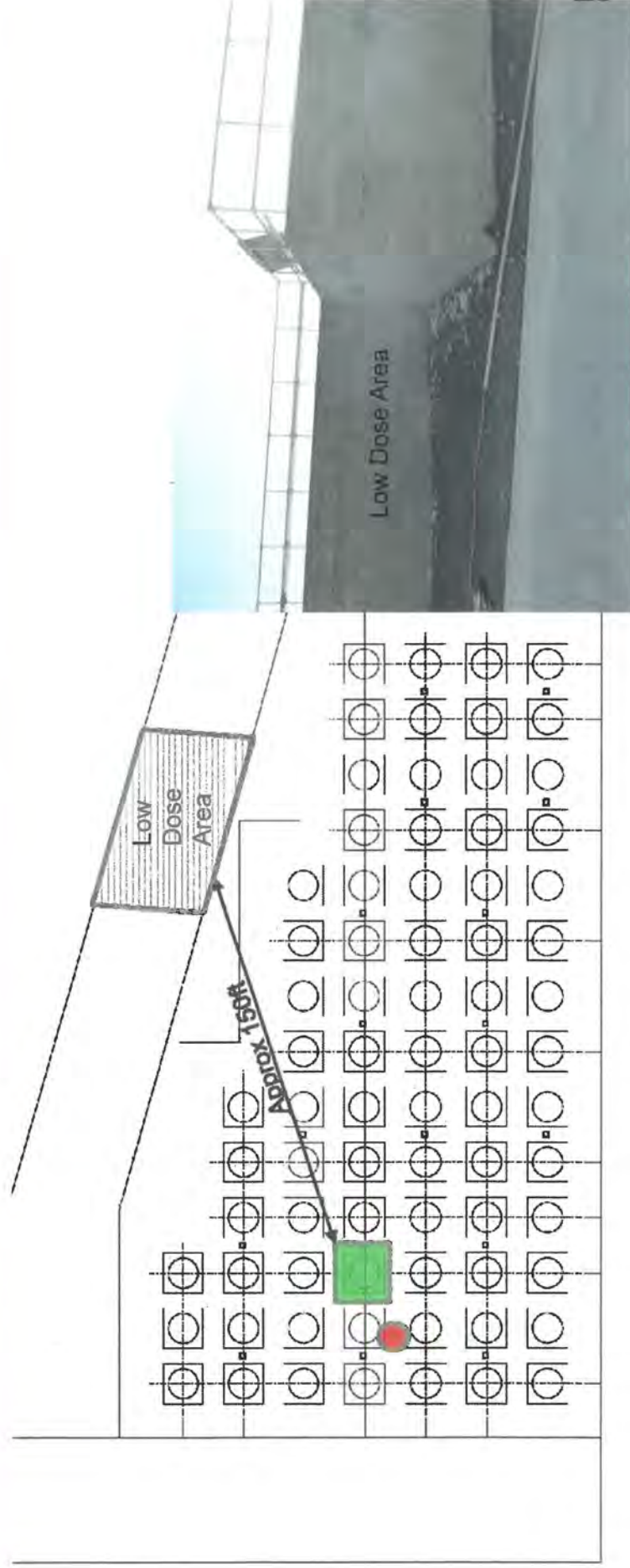




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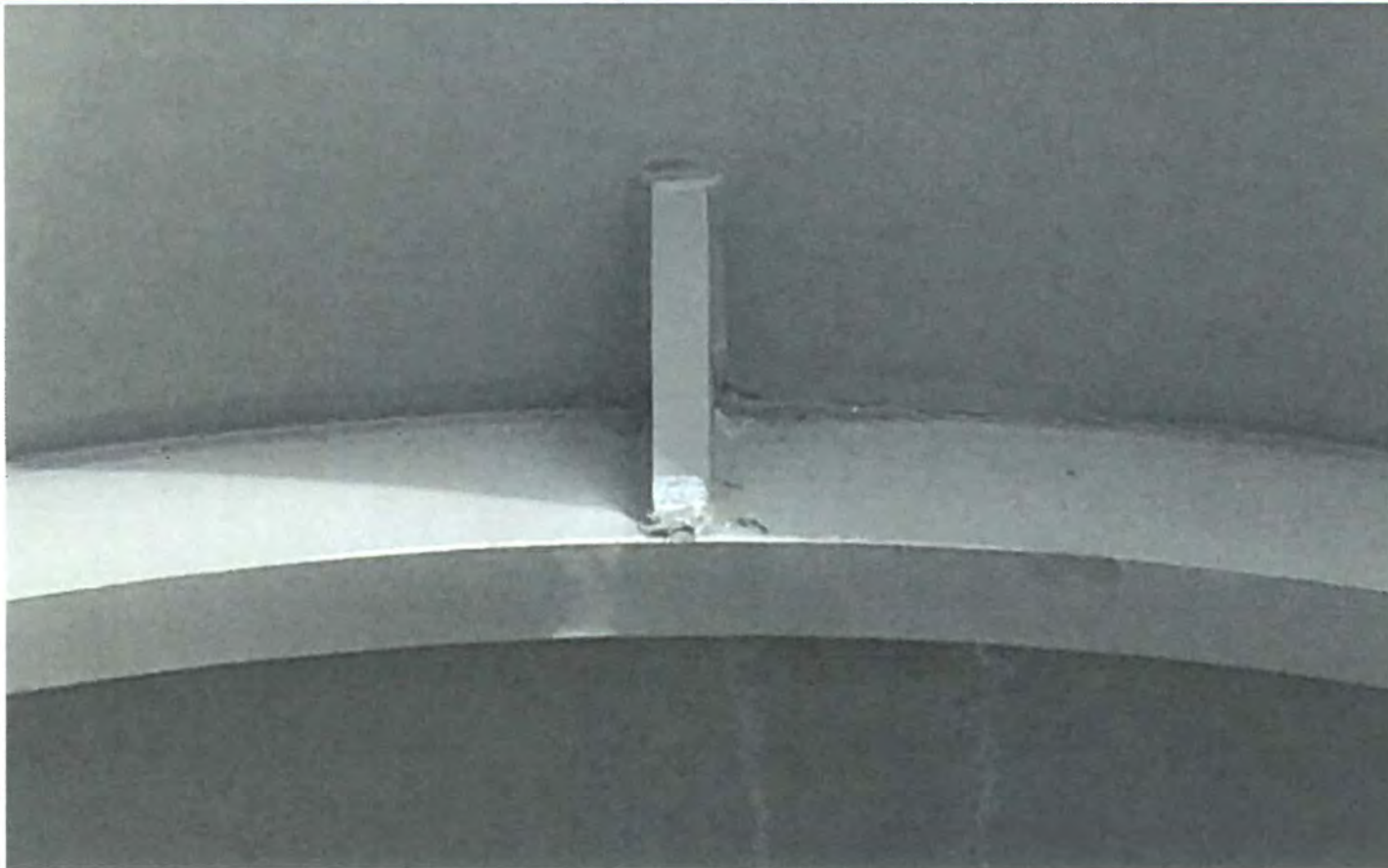
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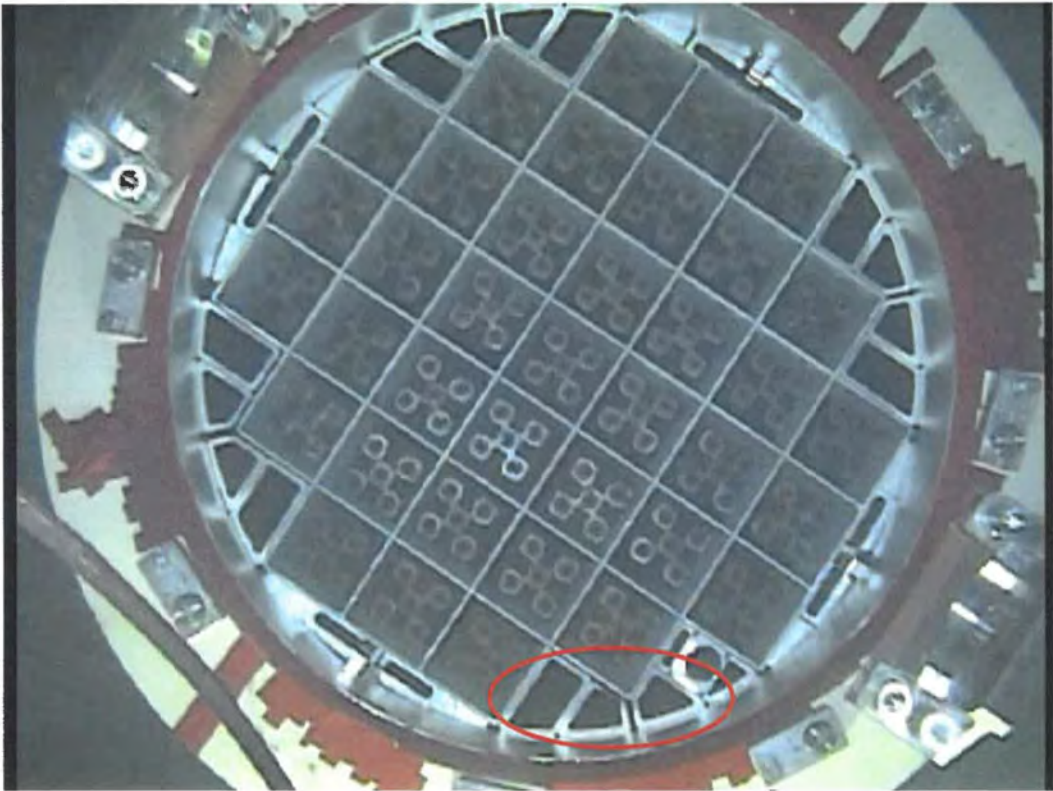
# Questions

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# Shims



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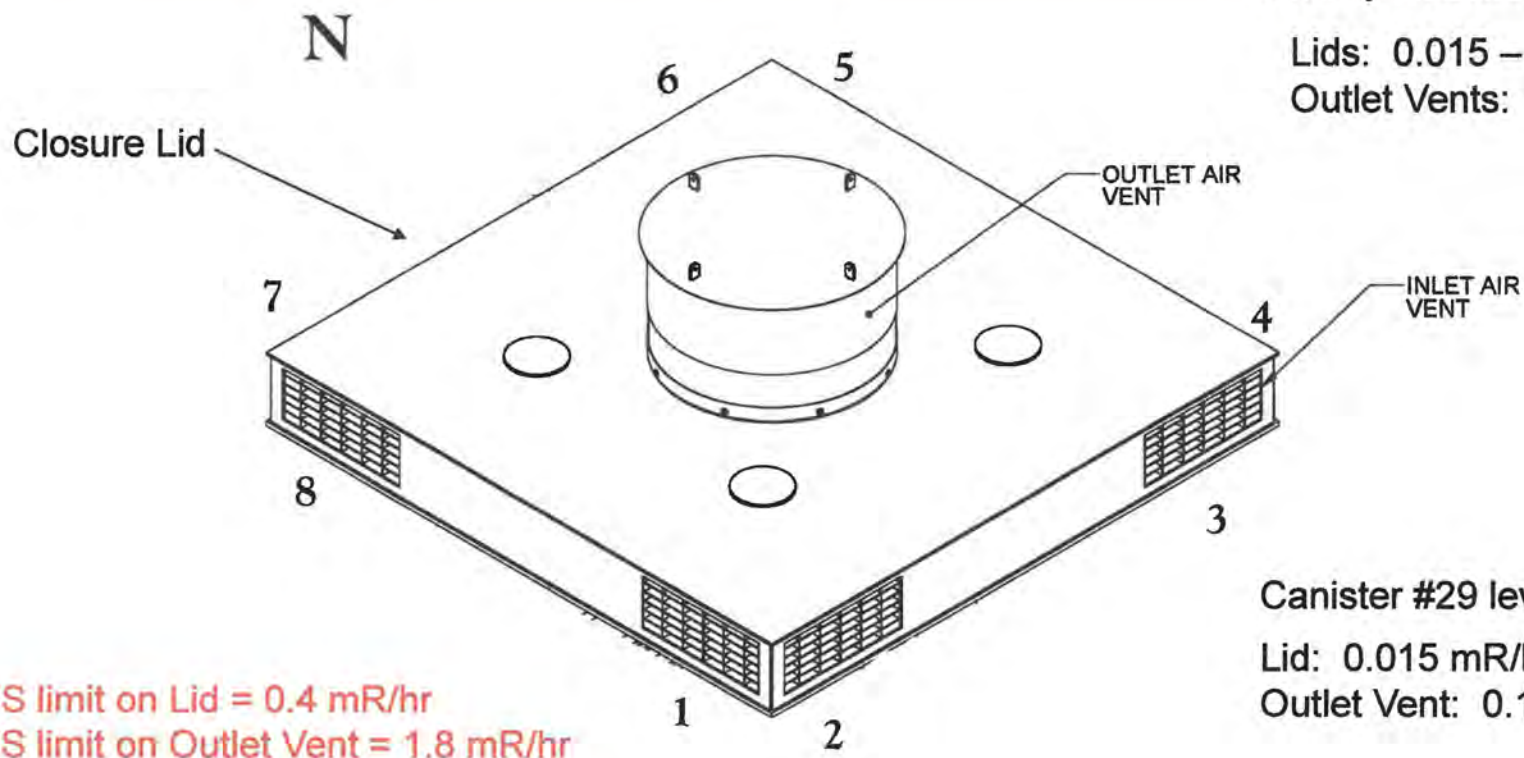
**Original Design: Machined Slots**



**Design Change: Standoffs Pins**



# Radiation Levels on the ISFSI Pad



Survey Results found by the NRC:

Lids: 0.015 – 0.018 mR/hr

Outlet Vents: 0.12 – 0.24 mR/hr

TS limit on Lid = 0.4 mR/hr  
TS limit on Outlet Vent = 1.8 mR/hr

Canister #29 levels in Gamma

Lid: 0.015 mR/hr

Outlet Vent: 0.12 mR/hr

# Aging Management Plan

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- Required upon *license renewal*
- Tracks Degradation of Structures, Systems, and Components
  - Concrete
  - Steel
  - Stainless Steel
- Some licensees have performed Aging Management Inspections
  - No breaches of the canisters have been identified
  - No chloride induced stress corrosion cracking has been identified
- California Coastal Commission Commitment

## Canister Drop analysis

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- San Onofre provided preliminary analysis
- Analysis under NRC review
- San Onofre preliminary results: no loss of containment

## Unresolved Item

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- Last NRC Inspection report (2017-001) documented an Unresolved Item
- Licensee has modified loading operations to address NRC concern

## Seismic and Flooding

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- Both ISFSI systems at San Onofre are evaluated for:
  - Design Base Earthquake
  - Maximum flood height and flood velocity (Tsunami)