



Decommissioning **San Onofre**

Nuclear Generating Station

Decommissioning Update

November 2, 2017

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Decommissioning Principles

***Safety
Stewardship
Engagement***

For more information on SONGS visit www.SONGScommunity.com



Decommissioning
San Onofre
Nuclear Generating Station

NRC ACTIVITIES

NRC Submittal Status

Item	Submittal Status	Approval Status
Exemption Request Offsite Insurance	Submitted September 2015	Forecast 4Q 2017
Exemption Request Onsite Insurance	Submitted October 2015	Forecast 4Q 2017
ISFSI Only License Amendment Request Tech Specs, Emergency Plan	Submitted December 2016	Forecast 4Q 2017
ISFSI Only License Amendment Request Security Plan	Submitted December 2016	Forecast 2Q 2018
License Amendment Request Remove Cyber Condition from License	Submitted May 2017	Forecast 1Q2018

Proposed Aging Management Guidance

- NRC guidance on Aging Management Programs (AMPs)
 - NUREG-2214, Managing Aging Processes In Storage (MAPS) Report
 - Draft issued for comment* October 2017
- Evaluates known aging degradation mechanisms
 - To determine if they could impact the safety function
 - Focused on extended license period (20 to 60 years)
- NUREG provides examples of AMPs that are generically acceptable to address credible aging mechanisms

*<https://www.federalregister.gov/documents/2017/10/24/2017-22983/managing-aging-processes-in-storage-report>

INSURANCE: ONSITE & OFFSITE COVERAGE

Onsite Insurance

- Operating plants
 - NRC requires \$1.06B in coverage SCE
 - Coverage is currently \$1.5B
- Shutdown Plants
 - NRC requires \$50M in coverage
 - SONGS currently at \$1.5B coverage
 - Will evaluate future coverage for ISFSI only

Offsite Insurance

Two layers

Primary Insurance Coverage

- Covers offsite damages from any accidents, including events relating to shipments of material
 - Coverage of \$560M provided via a combination of insurance and existing indemnity issued by NRC

Secondary Insurance Coverage

- Additional \$12B+ coverage for operating plants industry pool
 - Unnecessary coverage for decommissioning plant



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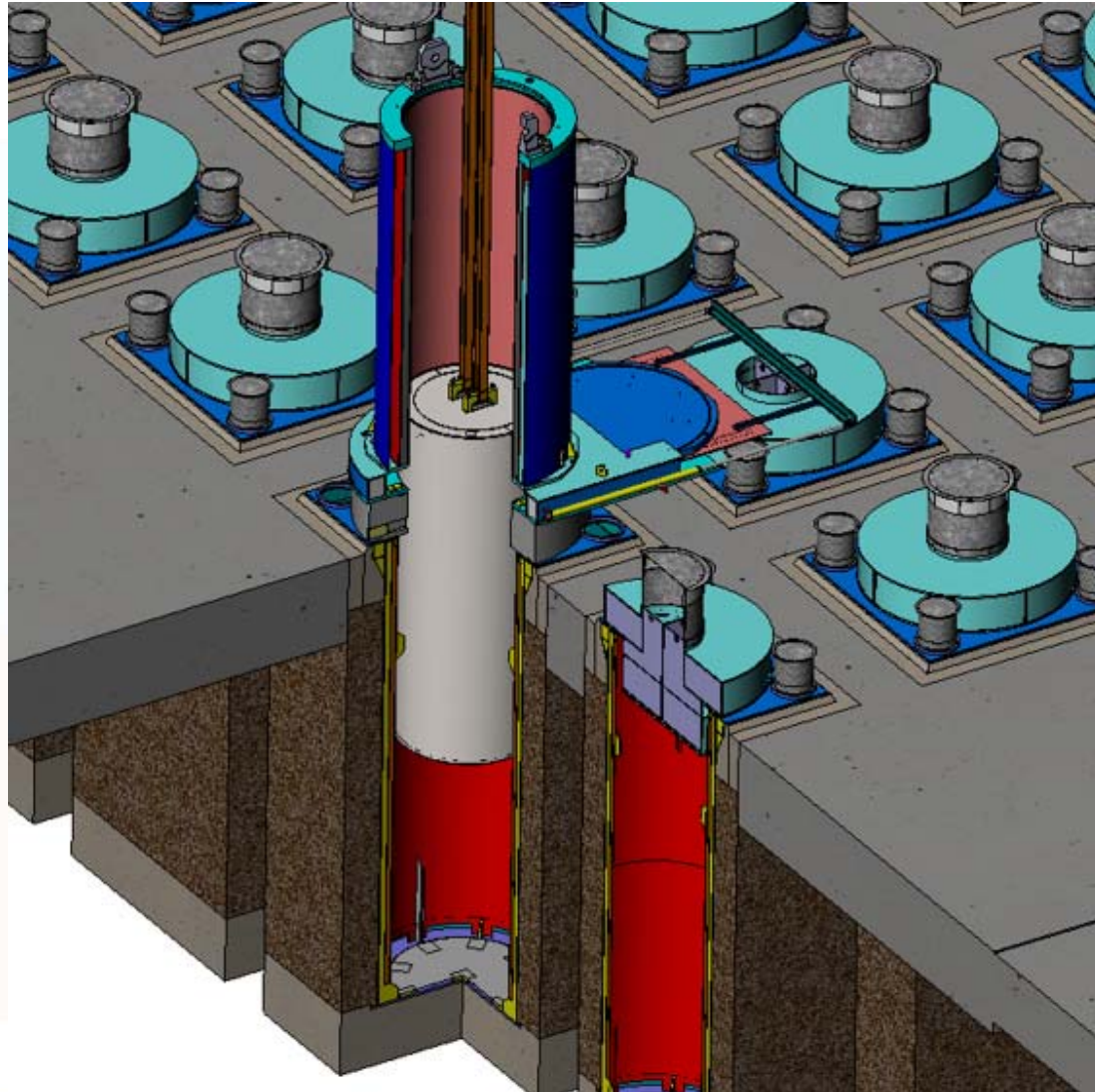
SITE ACTIVITIES UPDATE

Construction Complete



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ISFSI Design



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Fuel Offload Schedule

Action	Timing
ISFSI pad construction complete	August 2017
Security building complete	October 2017
Final SCE reviews and NRC inspections	November 2017
Start offload from wet to dry storage	December 2017
All fuel in passive dry storage	Mid-2019



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FUEL OFFLOAD “DRY RUN”

VIDEO

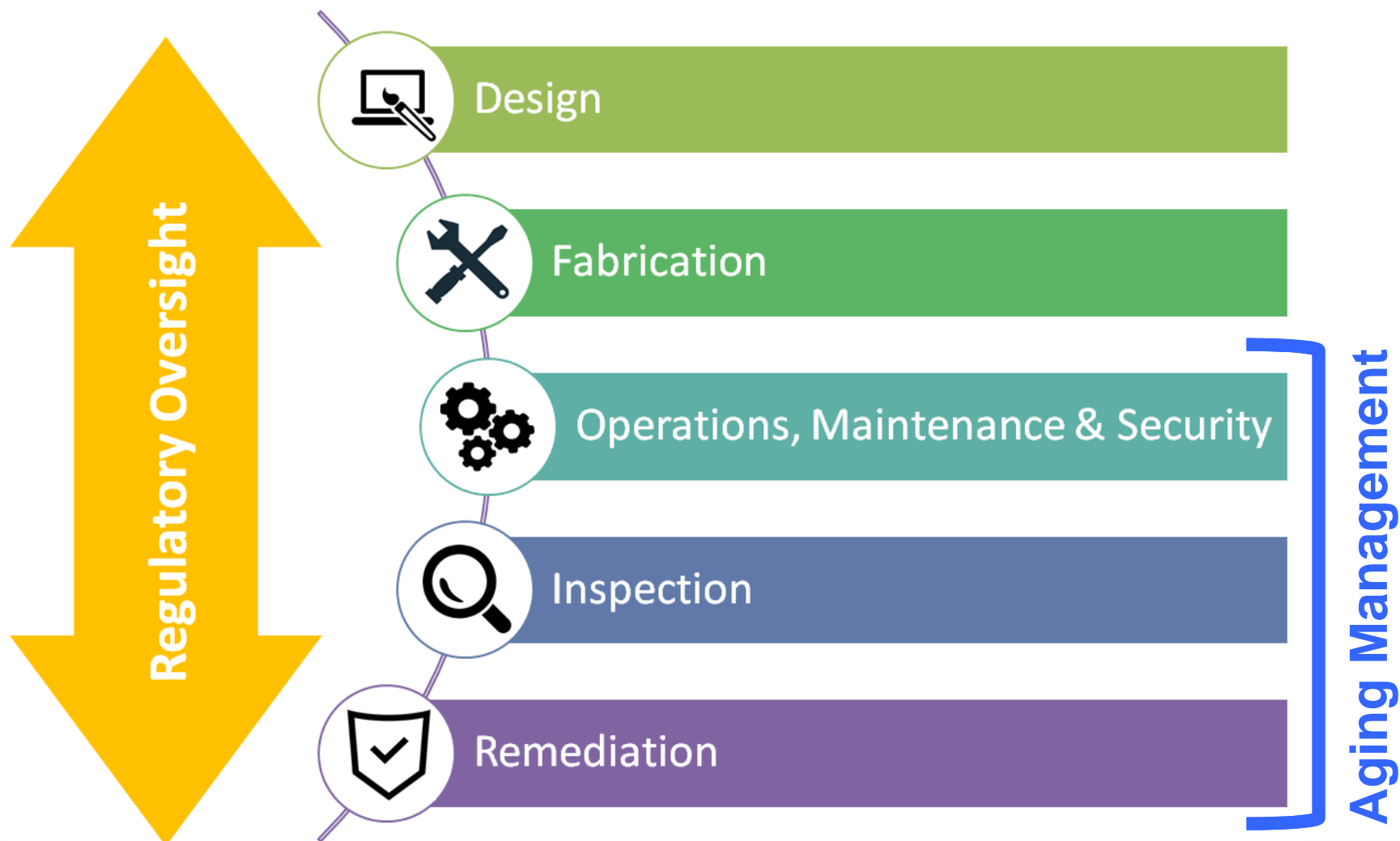


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DRY CASK STORAGE DEFENSE-IN-DEPTH RECAP



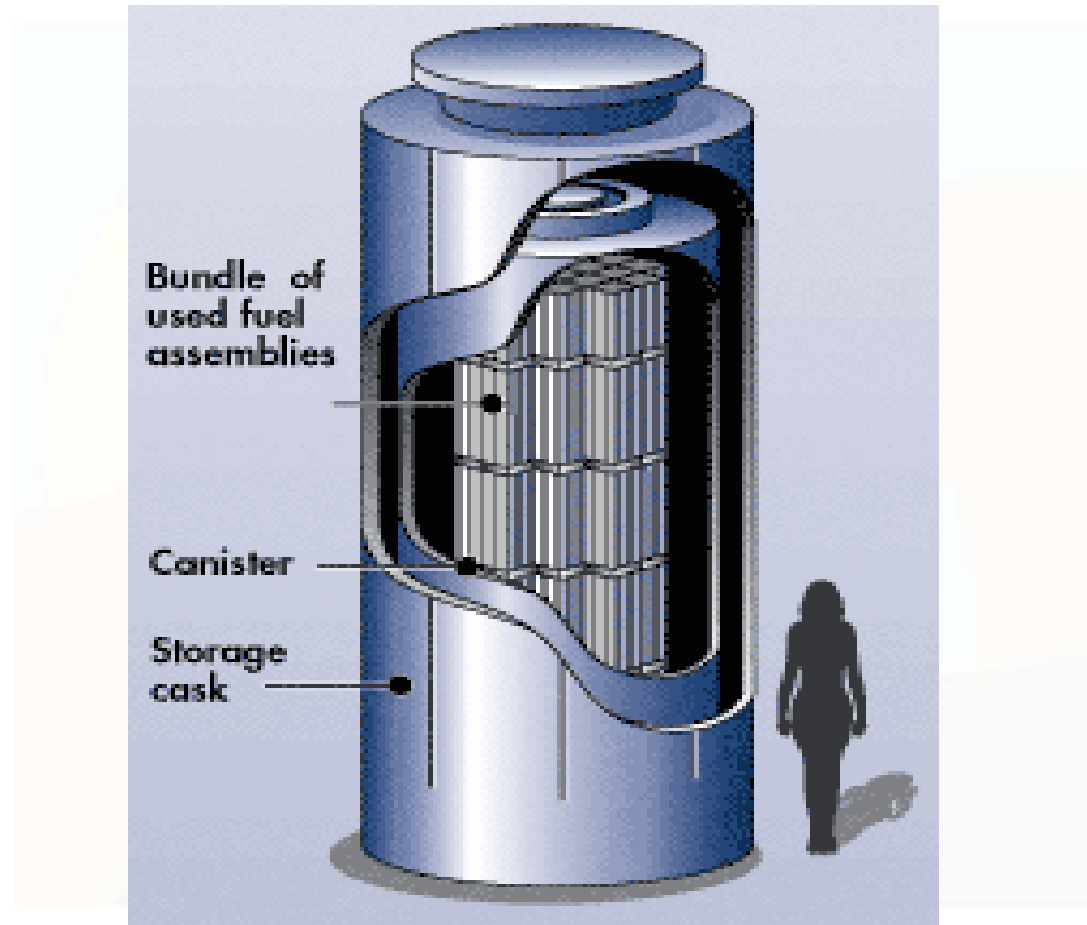
Dry Cask Storage Defense in Depth



Recap

- Defense in Depth
 - Past inspections
 - Potential flaws and consequences
 - Mitigations

Typical Dry Canister System





Past Inspections Using Existing Technology

- Equipment to perform canister inspections exists
- Industry developing more advanced inspection technologies
- Past inspections performed:
 - Completed inspections
 - AREVA – Rancho Seco and Calvert Cliffs
 - TN-40 – Prairie Island
 - TN-32 – North Anna
 - Ongoing inspections
 - AREVA – Calvert Cliffs, Oconee, HB Robinson
 - Holtec – Trojan

Consequences



- In unlikely event of a through-wall crack, NRC concluded* the postulated worst-case ISFSI accident has “insignificant consequences to public health and safety”
 - Inert helium release
 - Any fission gases that did escape would diffuse into the air
 - No high-pressure forces in canister to cause a release
 - Solid fission products would remain in fuel rods in canister

*Reference NRC NUREG 1140



Mitigations

Addressing Potential Flaws

- To address potential flaw, SCE working with vendors / industry to develop mitigation techniques
- Techniques under development
 1. Remote weld repair
 2. Canister-in-canister encapsulation
 3. Transport cask to store/contain compromised canister

For more information, reference 9/14 CEP meeting

“Dry Cask Storage Defense in Depth”

http://www.songscommunity.com/cep-events/091417_event.asp



Division of Spent Fuel Management Regulatory Conference

NRC Headquarters – Rockville, Maryland

Oct. 31 – Nov. 1, 2017

Relevant topics and presentations:

[Managing Aging Processes in Storage \(MAPS\) Report](#)

[Calvert Cliffs - ISFSI AMP Update & Lessons Learned](#)

[Dry Cask Storage Inspection and Delivery System Development](#)

[Naval Spent Fuel Transportation](#)

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M-290 Naval Spent Fuel Shipping Container



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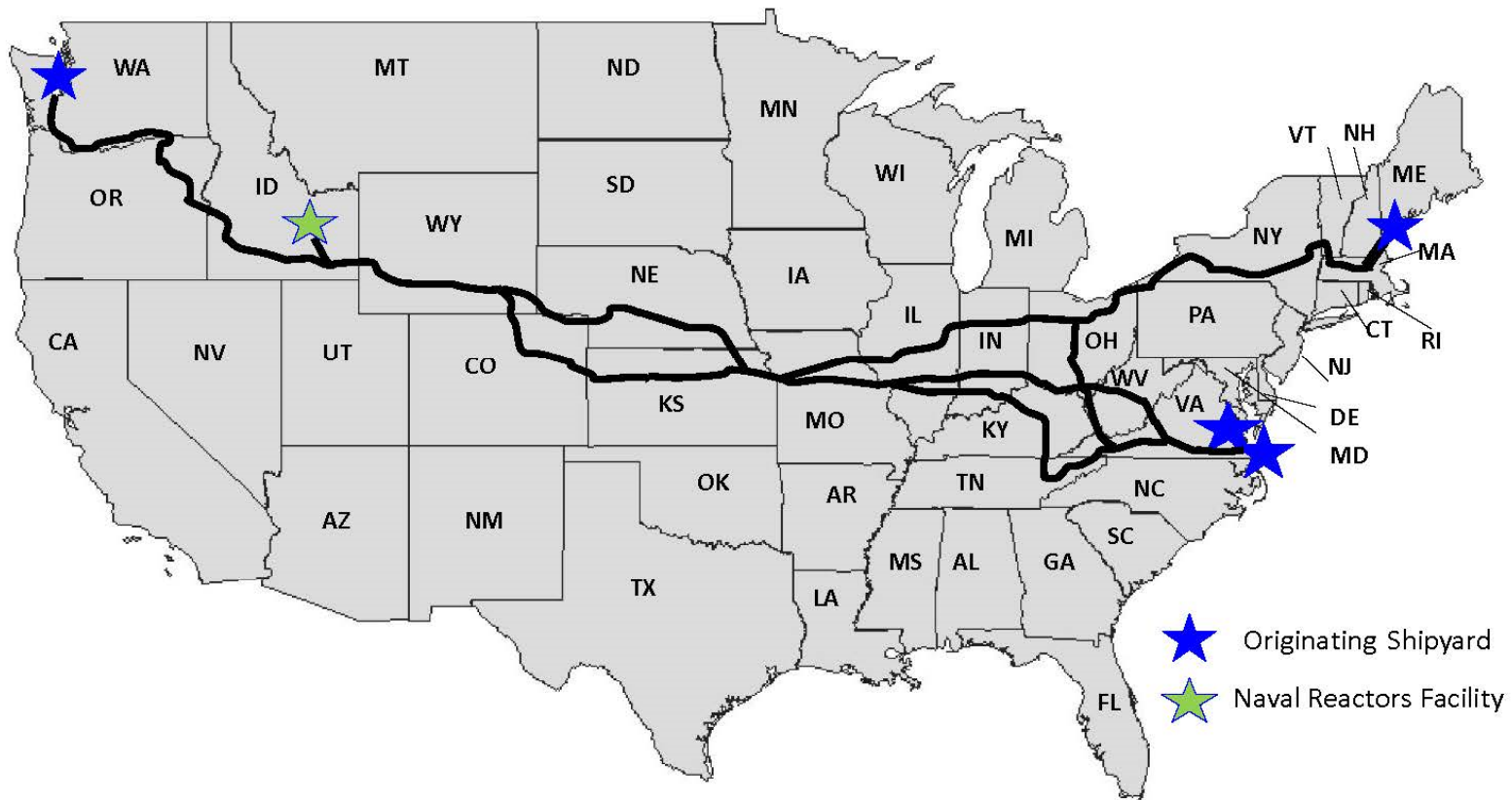
Naval Used Fuel Shipment



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Naval Used Fuel Transportation Routes

**874 CONTAINERS SAFELY SHIPPED
(March 1957 to Present)**





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DECOMMISSIONING GENERAL CONTRACTOR (DGC)

Decommissioning San Onofre Nuclear Generating Station Safety | Stewardship | Engagement





DGC: SONGS Decommissioning Solutions (SDS)

- SDS mobilized to site
- Approximately 100 personnel on site
- Planning Decontamination & Dismantlement (D&D)
- Forecast to start 4Q 2018
- On site staffing to increase prior to start of D&D

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ENVIRONMENTAL PERMITTING

Permitting Update

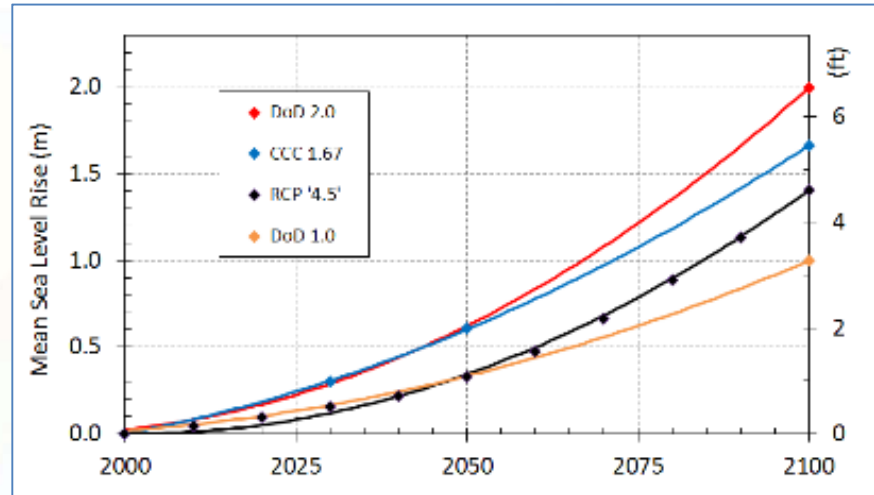
- June 2017 SCE requested CSLC to hold the EIR preparation to allow for update to project description
 - Incorporate SDS work plan
 - Evaluate post-license termination substructure removal
 - Integrate timing of ISFSI CDP review in 2035
 - Ensure CSLC had most accurate project description

Coastal Processes Study

- In 2016 SCE commissioned Coastal Environments (CE) to study impacts of coastal processes on site:
 - To better understand interaction between coastal processes and SONGS substructures after removal of the seawall
 - Planning tool that helps estimate future conditions at site when fuel and seawalls are removed
 - To inform SCE's end-state proposal to the Navy as landowner

Sea Level Rise Projections

- Utilized 4 sea level rise (SLR) projections by 3 agencies including Department of Defense (DoD) and CA Coastal Commission
- Future projections vary substantially and are bounded by the DoD scenarios
- Global sea level is rising, likely to continue at an accelerating rate
- Taken together, the SLR scenarios bound SCE's understanding of potential, future shoreline outcomes



Key Takeaways

- Effects are negligible until seawalls are removed
- After removal of seawalls in 2051, rate and magnitude of erosion & retreat of cliff face is strongly correlated with rate of sea level rise
- In long term, coastal processes will impact remaining onshore substructures at SONGS
- Removal of onshore substructures likely greater than necessary for NRC criteria



Revised Project Approach

- Prompt decontamination & dismantlement (D&D)
 - Remove above grade structures, radiological decontamination to NRC standards, conduit disposition
 - Retain conduits functionality for future potential dewatering
- Extend Navy easement until 2035
 - Aligns with CCC review of ISFSI CDP
- Removal of onshore substructures in future
 - More information available: spent fuel, coastal processes
 - Will be determined by Navy



Permitting Timeline

