Decommissioning Update

November 2, 2017

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Vice President Decommissioning & Chief Nuclear Officer
Decommissioning Principles

Safety
Stewardship
Engagement

For more information on SONGS visit www.SONGScommunity.com
NRC ACTIVITIES
## NRC Submittal Status

<table>
<thead>
<tr>
<th>Item</th>
<th>Submittal Status</th>
<th>Approval Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemption Request Offsite Insurance</td>
<td>Submitted September 2015</td>
<td>Forecast 4Q 2017</td>
</tr>
<tr>
<td>Exemption Request Onsite Insurance</td>
<td>Submitted October 2015</td>
<td>Forecast 4Q 2017</td>
</tr>
<tr>
<td>ISFSI Only License Amendment Request Tech Specs, Emergency Plan</td>
<td>Submitted December 2016</td>
<td>Forecast 4Q 2017</td>
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<tr>
<td>ISFSI Only License Amendment Request Security Plan</td>
<td>Submitted December 2016</td>
<td>Forecast 2Q 2018</td>
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<tr>
<td>License Amendment Request Remove Cyber Condition from License</td>
<td>Submitted May 2017</td>
<td>Forecast 1Q 2018</td>
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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

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
SITE ACTIVITIES UPDATE
Construction Complete
## Fuel Offload Schedule

<table>
<thead>
<tr>
<th>Action</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISFSI pad construction complete</td>
<td>August 2017</td>
</tr>
<tr>
<td>Security building complete</td>
<td>October 2017</td>
</tr>
<tr>
<td>Final SCE reviews and NRC inspections</td>
<td>November 2017</td>
</tr>
<tr>
<td>Start offload from wet to dry storage</td>
<td>December 2017</td>
</tr>
<tr>
<td>All fuel in passive dry storage</td>
<td>Mid-2019</td>
</tr>
</tbody>
</table>
FUEL OFFLOAD “DRY RUN”

VIDEO
DRY CASK STORAGE
DEFENSE-IN-DEPTH RECAP
Dry Cask Storage Defense in Depth

- Design
- Fabrication
- Operations, Maintenance & Security
- Inspection
- Remediation
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
M-290 Naval Spent Fuel Shipping Container
Naval Used Fuel Shipment
DECOMMISSIONING GENERAL CONTRACTOR (DGC)
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
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

**California State Lands Commission**

1. **Public Input**
   - NOP
   - Scoping Meetings
   - Scoping Period
   - Draft EIR Preparation
   - Draft EIR Public Review Period
   - Final EIR Preparation
   - Public Hearing

**California Coastal Commission**

1. SCE Submit CDP Application
2. Prepare Staff Report
3. Public Hearing
4. CDP Approval and NOD

**Timeline**

- **4Q 2017 – 1Q 2018**: NOP
- **2Q 2018**: Scoping Meetings
- **2Q/3Q 2018**: Draft EIR Public Review Period
- **3Q 2018**: Final EIR Preparation
- **4Q 2018**: Public Hearing
- **4Q 2018**: CDP Approval and NOD