SONGS Shutdown and Decommissioning

Senate Energy, Utilities, and Communications Committee
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Steve Pickett
Executive Vice President, External Relations
Southern California Edison

Agenda

- Overview of the SONGS property
- Decommissioning and employee update
- Spent nuclear fuel and seismic studies
- Planning for the future

Overview of the SONGS Property

SONGS Site Overview Plan

SONGS Plant View

SONGS Mesa View

SONGS Plant Detailed View

For additional information, refer to:
http://www.songscommunity.com/virtual-tour.asp

Decommissioning Process

NRC Decommissioning Process

- The NRC decommissioning process consists of three phases
  - Phase I - initial activities
    - Submit written certification of permanent cessation of operations within 30 days of the nuclear facility shutting down
    - Submit written certification that fuel has been removed from the reactor
    - Submit a post-shutdown decommissioning activities report (PSDAR), an irradiated fuel management plan, and a site specific decommissioning cost estimate (DCE)
      - *Required within two years of submitting the certification of permanent cessation of operations and are typically submitted together as a comprehensive PSDAR*
      - *Includes descriptions and schedules for activities, and evaluations of environmental impact*
      - *SCE plans to submit the PSDAR by mid-2014*
  - Phase II - major dismantling and storage activities
  - Phase III - license termination activities
- Throughout the process we will keep the local communities and state authorities informed of our progress

SONGS Decommissioning

- Decommissioning will be funded from the decommissioning trust fund
  - Cost to decommission is estimated to be $4.1 billion
    - The NRC has jurisdiction over the portion of the trust fund associated with radiological decommissioning and uses a generic formula to determine this amount (approximately $1.0 billion)
    - Up to 3% of the NRC's generic "formula amount" of the decommissioning trust fund can be used for planning purposes
  - SCE's share is $3 billion. The value of SCE's trust fund as of June 30th is $2.7 billion
  - CPUC must grant approval to use the CPUC-jurisdictional portion of the trust fund
- SCE will continue to maintain and operate certain SONGS systems, including those associated with safety and security
  - SCE estimates that $440 million of plant investment will remain used and useful for these necessary activities in the near-term.
  - Includes sumps and drains; nuclear and domestic service water; radiological waste; component cooling water; heating, ventilation and air condition (HVAC) for the control and fuel handling building; HVAC for the radiological waste building; saltwater cooling; spent fuel pool and fuel handling; and emergency diesel generators (one generator for each unit)

SONGS Employee Staffing

- A transition plan has been developed for SONGS staff
  - Staffing levels will allow SONGS to remain consistent with NRC regulations and meet emergency response obligations
  - Staffing will ultimately be reduced from about 1,500 to 400
    - Staffing will be reduced to 575 by September 2013
      - *Approximately 50% of SONGS current personnel is security. Approximately 300 of the 575 remaining positions will be security related*
    - Conducted "Effects bargaining" with Utility Workers Union of America (UWUA) and International Brotherhood of Electric Workers (IBEW)
      - *Reached agreement with UWUA and the agreement has been ratified by membership*
      - *IBEW has agreed to give SONGS employees preference over new hires for generation positions represented by IBEW*

Transition Resources

- Transition resources being offered to employees
  - Resume writing classes, career fairs, workshops for utilizing electronic tools and social media options, outplacement services
  - First external job fair had over 1,000 attendees and over 30 hiring companies
  - Internal company Open Houses hosted over 800 employees in discussing over 400 job opportunities
  - A comprehensive communication plan has been developed to keep employees updated on staffing activities

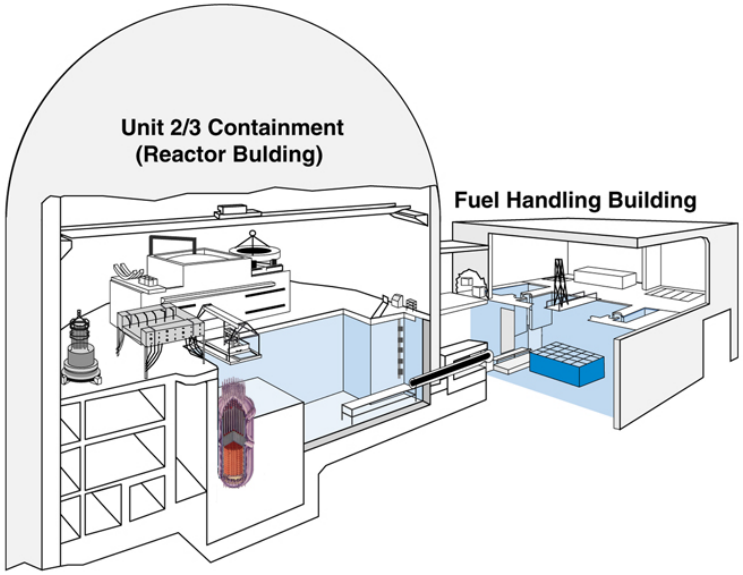
Spent Nuclear Fuel and Seismic Studies

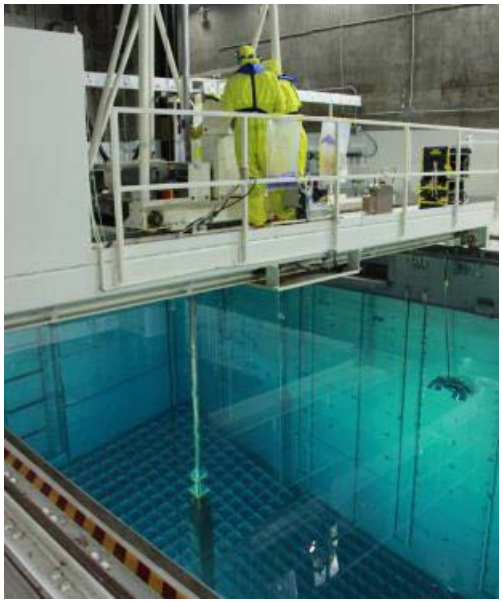
Spent Nuclear Fuel Storage

- Spent nuclear fuel consists of assemblies that are made up of fuel rods filled with uranium pellets (the fuel that is used to generate power)
- Spent nuclear fuel at SONGS is stored in either:
  - Enclosed, steel-lined concrete pools filled with water (spent fuel pools)
  - Sealed steel canisters housed in reinforced concrete structures (dry cask storage)
- SONGS used over 4,000 fuel assemblies
  - SONGS' spent fuel pools contain a total of 2,776 assemblies
  - SONGS' dry cask storage modules contain over 1,100 fuel assemblies
  - A GE storage facility in Morris, Illinois houses 270 assemblies from Unit 1
- No fuel assemblies remain in the reactor cores of Units 2 and 3
- SONGS' spent fuel pools and dry cask storage systems are designed to seismic standards consistent with other safety-related structures on the site

Characteristics of Spent Fuel Pools

- The pools have thick walls and floors to provide structural integrity
- The fuel is submerged in 23 feet of water (from the top of the spent fuel assembly)
- Pool water is recirculated to ensure that cooling is continuously provided to remove residual heat from the fuel and for radiation protection
- Spent fuel is stored in racks to support the fuel
- SONGS spent fuel pools were licensed as part of the original license for Units 2 and 3





Characteristics of Dry Cask Storage

- Involves sealing spent nuclear fuel in airtight steel containers or casks that provide both structural support and radioactive shielding
- Spent nuclear fuel cannot be transferred to a dry cask storage module until it has cooled in a pool for approximately 5 to 7 years
- Designed to withstand various natural phenomena including floods, projectiles from a tornado, seismic events, temperature extremes, and lightning strikes
- Dry cask storage necessary until a permanent spent nuclear fuel repository has been developed by the federal government
- Known as an independent spent fuel storage installation (ISFSI)
  - ISFSIs are facilities designed and constructed for the interim storage of spent nuclear fuel and related radioactive materials
  - ISFSIs must meet strict design and performance specifications prior to being certified by the NRC
  - SONGS' ISFSI currently consists of 51 dry storage modules that contain spent nuclear fuel from Units 1, 2, and 3

SONGS Seismic Studies

- SCE is evaluating the need for the SONGS seismic research projects since SONGS was permanently retired
  - SCE is planning to reduce the scope to only those activities that are (1) required to fulfill NRC requirements or (2) research projects that have already been initiated and are nearing completion
  - SCE will complete low energy 2D and 3D seismic reflective mapping studies
  - SCE will not pursue high energy 3D seismic studies
  - SCE will seek relief from NRC commitments that no longer apply to a permanently shutdown nuclear generating facility

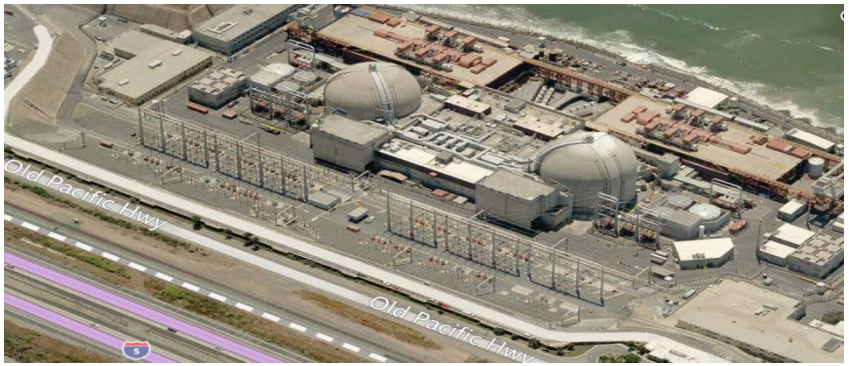
Planning for the Future

Long Term Site Considerations

- SONGS is on easements and/or on land leased from the U.S Navy (Department of Defense)
  - The lease agreement (Mesa side) currently require SCE to remove all of the buildings unless the U.S Navy (Marine Corps) requests otherwise
  - The easement agreements (Plant side and transmission towers) currently require SCE to return the land to its original condition at the conclusion of nuclear plant commissioning
  - Alternative uses of the site under easements will require agreement from the U.S. Navy and approval by Congress

SONGS Transmission Infrastructure

- Consists of 230 kV switchyard with nine 230 kV transmission lines that emanate from it
  - Switchyard consists of multiple pieces of high-voltage electrical equipment, such as circuit breakers, disconnect switches, transformers, surge/lightning arresters, etc.
  - Five of the lines go to the SDG&E transmission system and four to SCE's system
- It is jointly owned facility, and multiple jurisdictions have control over various aspects of its operations and maintenance (e.g. SCE, SDG&E, CAISO)
- The switchyard facilities at SONGS serve three purposes:
  - Interconnected and delivered electricity from SONGS to the California grid controlled by CAISO
  - Delivered SONGS station light and power from the grid to the plant
  - Physically connects the SCE-owned transmission grid to the SDG&E-owned transmission grid



- SONGS switchyard is the primary connection point between the transmission systems of SCE and SDG&E, and needs to remain in place in order to flow power from the north into Northern San Diego County

Concluding Remarks

- The retirement of SONGS was a difficult decision, and the right decision
- SCE is committed to achieving our mission of safely delivering reliable, affordable electricity to our customers
- We will continue to do so as we embark on the decommissioning process
- We look forward to continuing this dialogue with you to keep you informed