



Decommissioning **San Onofre** Nuclear Generating Station

Decommissioning Update & Progress 2014 to Date

November 10, 2016

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Decommissioning Principles

Established core principles to guide decommissioning:

- Safety
 - Safely decommissioning San Onofre
- Stewardship
 - Leave the community better off
 - Spending Nuclear Trust Funds wisely
 - Return any unused monies to ratepayers
- Engagement
 - Decommissioning process is inclusive, forward-thinking, involving diverse stakeholders

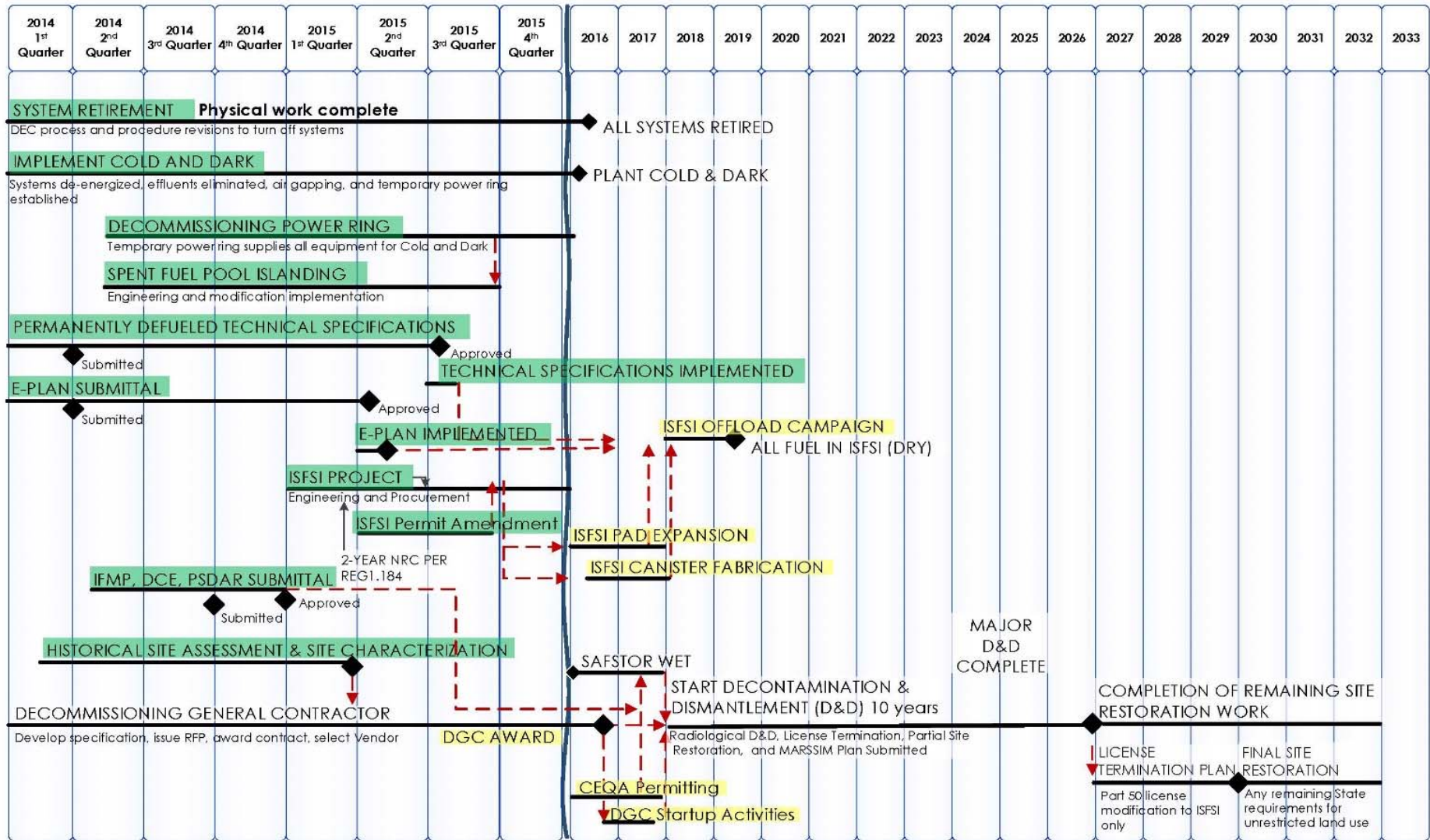


Decommissioning Plan

20 Year Plan

◆ Major Milestone

■ Completed Decommissioning Activities
 ■ Critical Decommissioning Activities





Decommissioning
San Onofre
Nuclear Generating Station

NRC ACTIVITIES

Decommissioning San Onofre Nuclear Generating Station Safety | Stewardship | Engagement





Key Submittals Approved to Date

- Satisfied NRC regulatory requirements

Activity/Submittals	Status
Post-Shutdown Decommissioning Activities Report (PSDAR)	Accepted 2014
Decommissioning Cost Estimate (DCE)	Accepted 2014
Irradiated Fuel Management Plan (IFMP)	Approved 2015
Permanently Defueled Emergency Plan	Approved 2015
Permanently Defueled Technical Specifications	Approved 2015
Defueled Quality Assurance Plan	Approved 2015
Spent Fuel Pool Island Cooling System License Amendment Request	Approved 2016

NRC Licensing Pending

Submittal	Status	Forecast Approval
License Amendment Request – Extend Cyber Security Program Milestone 8	Submitted June 16, 2016	December 2016 - January 2017
Exemption* Request Offsite Insurance	Submitted September 2015	2Q 2017
Exemption* Request Onsite Insurance	Submitted October 2015	2Q 2017

*Exemption is how the NRC currently handles a change in the regulatory status for decommissioning plants



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SITE ACTIVITIES UPDATE

Decommissioning San Onofre Nuclear Generating Station Safety | Stewardship | Engagement





Site Readiness 2014 to Date

- ✓ Defueled reactors
 - Removing fuel reduced risk scenarios
 - No longer licensed to refuel reactors

- ✓ Cold & Dark
 - De-energized plant and drained / isolated plant systems no longer required
 - Retired operating systems
 - Removed remaining hazards from the plant
 - Placed plant in a safe condition for a non-operating configuration
 - Prepared plant for eventual safe decommissioning while protecting used fuel
 - Installed isolated power ring

- ✓ Islanded spent fuel pools
 - Installed chillers to cool pools without ocean water
 - Legacy systems removed from service
 - Reduced use of ocean water by more than 95%

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ISFSI Project Expansion

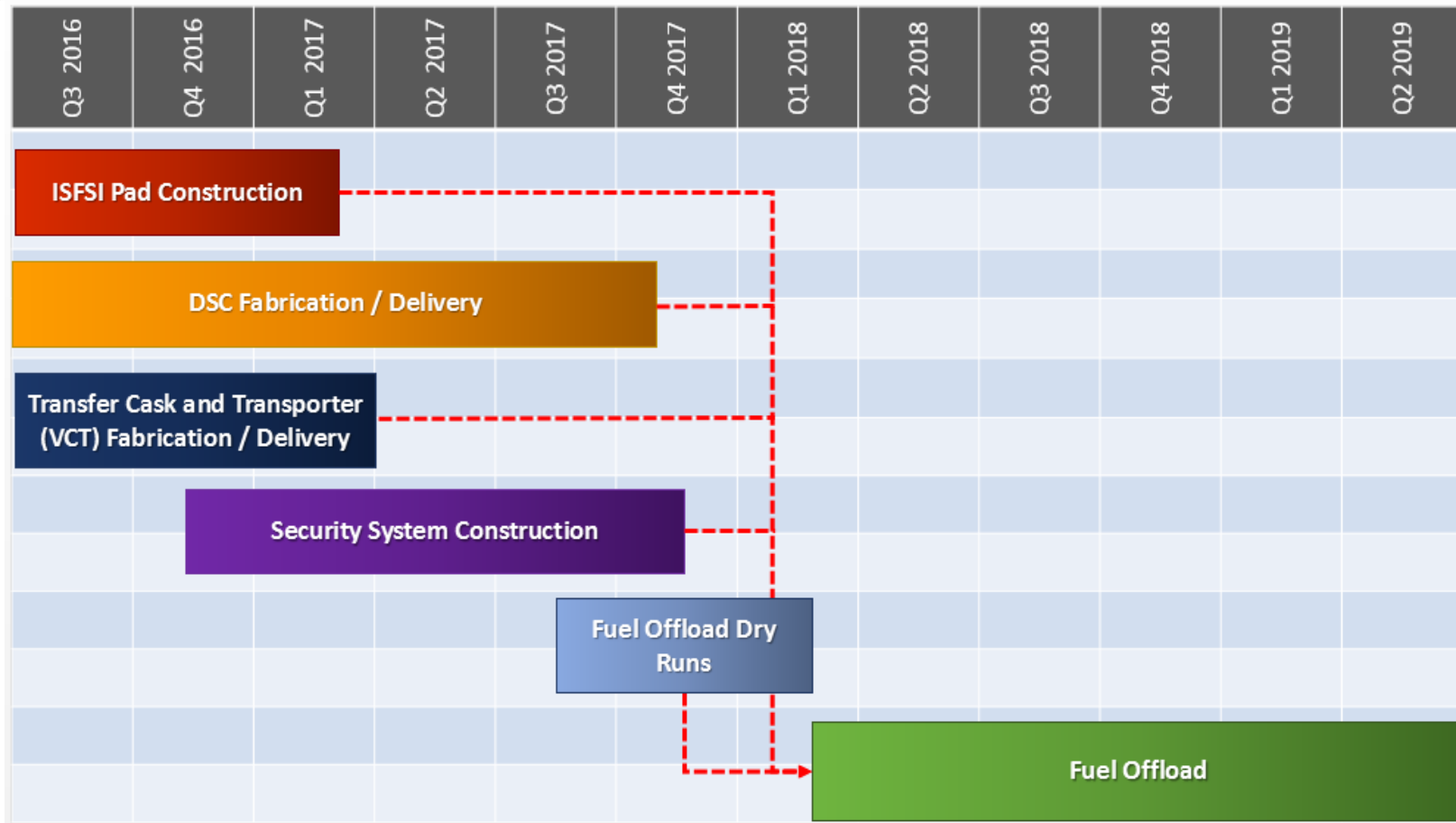


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ISFSI Expansion Project Schedule



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Addressing Questions

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Topics

- DOE spent fuel litigation: Cost recovery and ratepayer refunds
- Decommissioning finance briefing



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DOE Spent Fuel Litigation



Spent Fuel Litigation

- Using litigation to recover costs incurred due to DOE breach of contract
- \$304.8 million recovered to date by SONGS
 - SCE share refunded to customers after considering litigation and other costs
- 2016 settlement provides a claim process from 2014 to 2016
 - Claim for 2014-2015 filed 4Q 2016 for \$56.3 million
- Damages recovered by SCE subject to California Public Utilities Commission (CPUC) review

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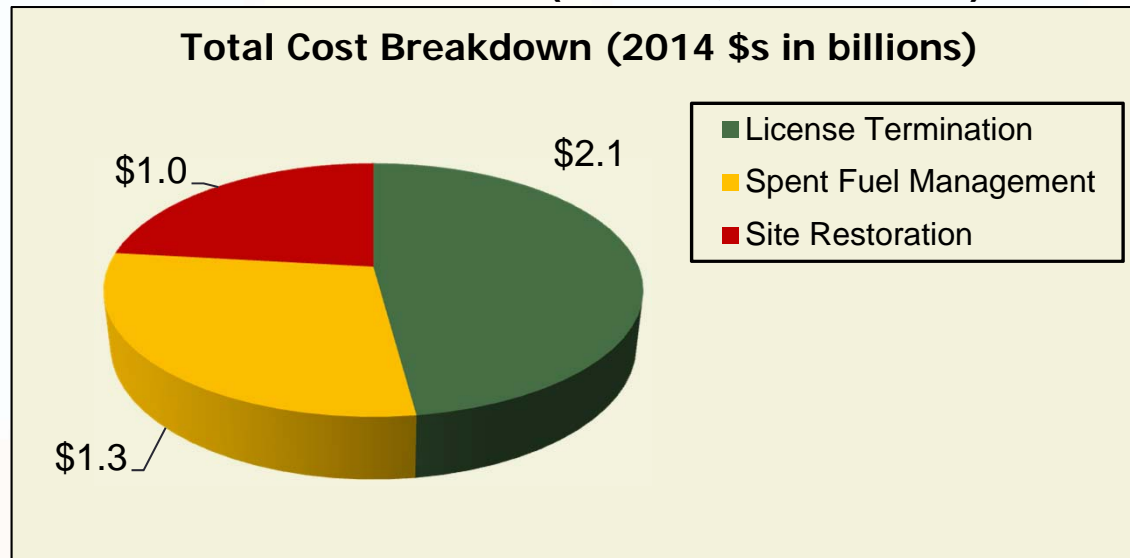


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Decommissioning Cost Estimate Breakdown

Total Cost = \$4.4B (2014 \$s, 100% Level)



- SCE share in trust fund overseen by 5 member trust committee and regulated by CPUC
- Trust funds are fully funded, no additional collections at this time
- The \$4.4 Billion in DCE includes 25% contingency
- DCE includes \$95.4 million for removal of offshore conduits, includes 25% contingency



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SCE Continuing Priorities

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Continuing Priorities

- Safety
 - Transfer fuel from wet to dry storage
 - Development of aging management programs, used fuel storage defense-in-depth
- Stewardship
 - CEQA process
 - Onboard decommissioning general contractor
- Engagement
 - Making CIS a reality

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Supporting CIS

SCE supports all safe and reasonable solutions for moving used fuel off site

- Consolidated Interim Storage Initiatives
 - Waste Control Specialists (West Texas)
 - Holtec Eddy Lea Energy Alliance (New Mexico)
- DOE Consent-Based Siting Public Meetings
 - Draft Summary of Public Input Report
 - Discussing next steps
- Bipartisan Policy Center
 - “Moving Forward with Consent-Based Siting Report”
 - Recommendation on next steps



Used Fuel Management Strategy

- Safely manage and store San Onofre's used nuclear fuel until it is removed from site
- Promptly offload fuel from pools to passive dry cask storage
- Recover used fuel storage costs from DOE
- Support all safe and reasonable options to remove used nuclear fuel from San Onofre site

CEQA

- State Lands Commission (SLC) lead agency for CEQA
 - SLC selected Aspen Environmental Group as consultant for CEQA process
 - U2/U3 proposed conduit disposition:
 - Remove all vertical risers on intake conduits
 - Remove subset of vertical diffuser ports on discharge conduits
 - Abandonment-in-place horizontal conduits
- Benefits:** minimizes seafloor disturbance and waste, maintains existing habitat, and limits disruption to recreational activities.



Decommissioning General Contractor (DGC) Selection

- Selection from qualified commercial nuclear industry firms
- Competitive bid process
- Utilized independent 3rd party professional service to develop strategy and sourcing process
- Utilized independent 3rd party Subject Matter Experts for reviews and critiques of processes, strategies and outcomes



Decommissioning General Contractor (DGC) Mobilization

- Contract awarded end of 4Q 2016
- Selected DGC to mobilize 1Q 2017
- DGC project duration 8 to 10 years



Aging Management and Defense in Depth

- SCE actively collaborating with industry groups to develop inspection programs
 - Nuclear Energy Institute / NRC / DOE meetings
 - Electric Power Research Institute Sub-Committees
 - Holtec Users Group
 - AREVA Users Group
- **Areva system:** Via NRC license renewal, developing aging management program (AMP)
- **Holtec system:** Developing AMP early, consistent with California Coastal Commission permit

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