Safety | Stewardship | Engagement

Decommissioning
San Onofre
Nuclear Generating Station

Decommissioning Update

May 11, 2017

Tom Palmisano

Vice President Decommissioning &
Chief Nuclear Officer

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Decommissioning
San Onofre
Nuclear Generating Station

Decommissioning Principles

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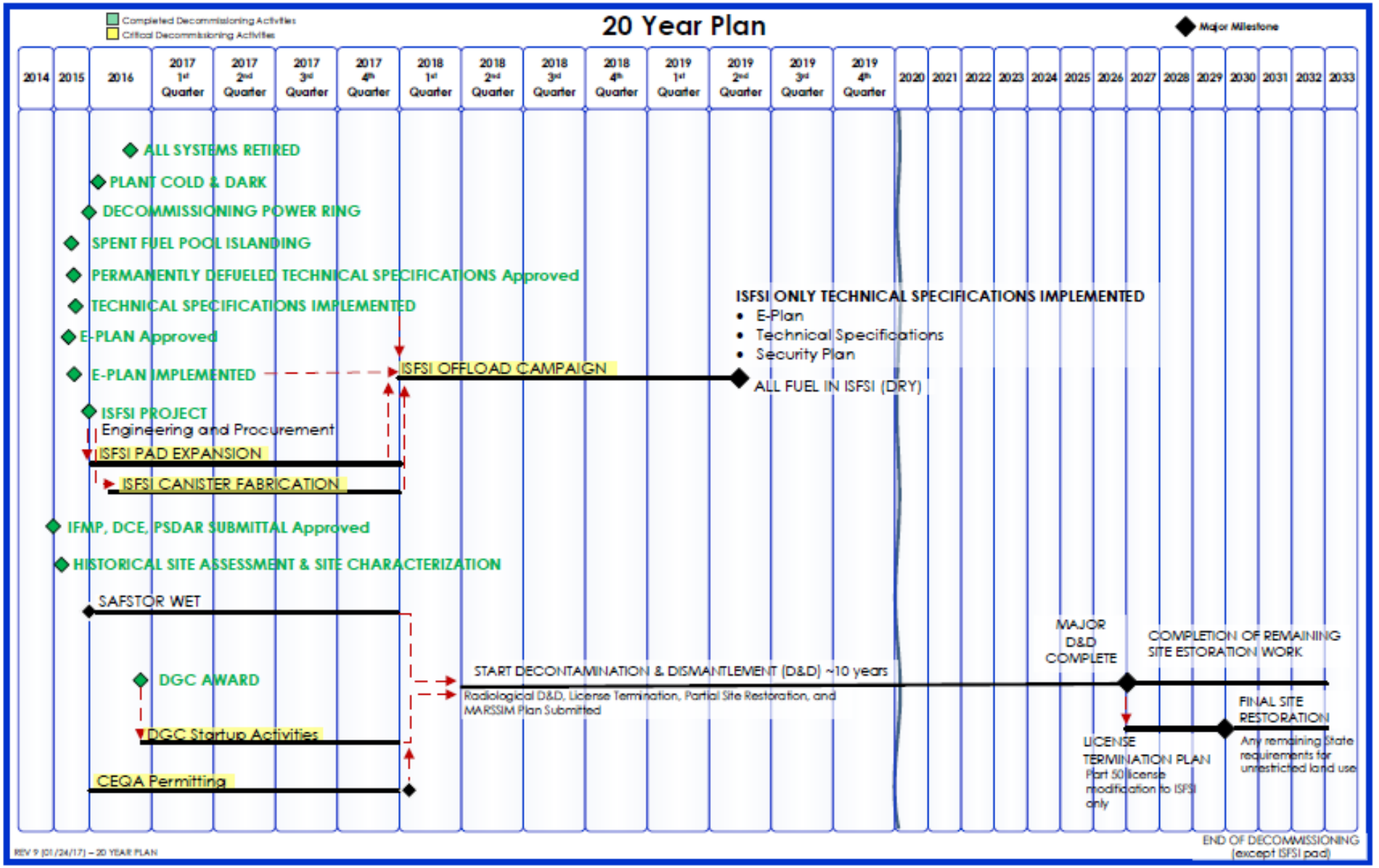
For more information on SONGS visit www.SONGScommunity.com


Completed Decommissioning Activities
Critical Decommissioning Activities
20 Year Plan
Major Milestone
2014
2015
2016
2017 1st Quarter
2017 2nd Quarter
2017 3rd Quarter
2017 4th Quarter
2018 1st Quarter
2018 2nd Quarter
2018 3rd Quarter
2018 4th Quarter
2019 1st Quarter
2019 2nd Quarter
2019 3rd Quarter
2019 4th Quarter
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
ALL SYSTEMS RETIRED
PLANT COLD & DARK
DECOMMISSIONING POWER RING
SPENT FUEL POOL ISLANDING
PERMANENTLY DEFUELED TECHNICAL SPECIFICATIONS Approved
TECHNICAL SPECIFICATIONS IMPLEMENTED
E-PLAN Approved
E-PLAN IMPLEMENTED
ISFSI OFFLOAD CAMPAIGN
ISFSI ONLY TECHNICAL SPECIFICATIONS IMPLEMENTED
• E-Plan
• Technical Specifications
• Security Plan
ALL FUEL IN ISFSI (DRY)
ISFSI PROJECT
Engineering and Procurement
ISFSI PAD EXPANSION
ISFSI CANISTER FABRICATION
IFMP, DCE, PSDAR SUBMITTAL Approved
HISTORICAL SITE ASSESSMENT & SITE CHARACTERIZATION
SAFSTOR WET
MAJOR D&D COMPLETE
COMPLETION OF REMAINING SITE ESTORATION WORK
DGC AWARD
START DECONTAMINATION & DISMANTLEMENT (D&D) ~10 years
Radiological D&D, License Termination, Partial Site Restoration, and MARSSIM Plan Submitted
FINAL SITE RESTORATION
Any remaining State requirements for unrestricted land use
DGC Startup Activities
LICENSE TERMINATION PLAN
Part 50 license modification to ISFSI only
CEQA Permitting
END OF DECOMMISSIONING (except ISFSI pad)
REV 9 (01/24/17) – 20 YEAR PLAN

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NRC ACTIVITIES

Decommissioning San Onofre Nuclear Generating Station

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NRC Submittal Status

Item	Submittal Status	Approval Status
License Amendment Request **Extend Cyber Security Program Milestone 8**	Submitted June 16, 2016	Approved January 23, 2017
Exemption* Request **Offsite Insurance**	Submitted September 2015	Forecast 2Q 2017
Exemption* Request **Onsite Insurance**	Submitted October 2015	Forecast 2Q 2017
ISFSI Only License Amendment Request **Tech Specs, Emergency Plan, Security Plan**	Submitted December 2016	Forecast 2Q 2018

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

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SITE ACTIVITIES UPDATE

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ISFSI Project Expansion

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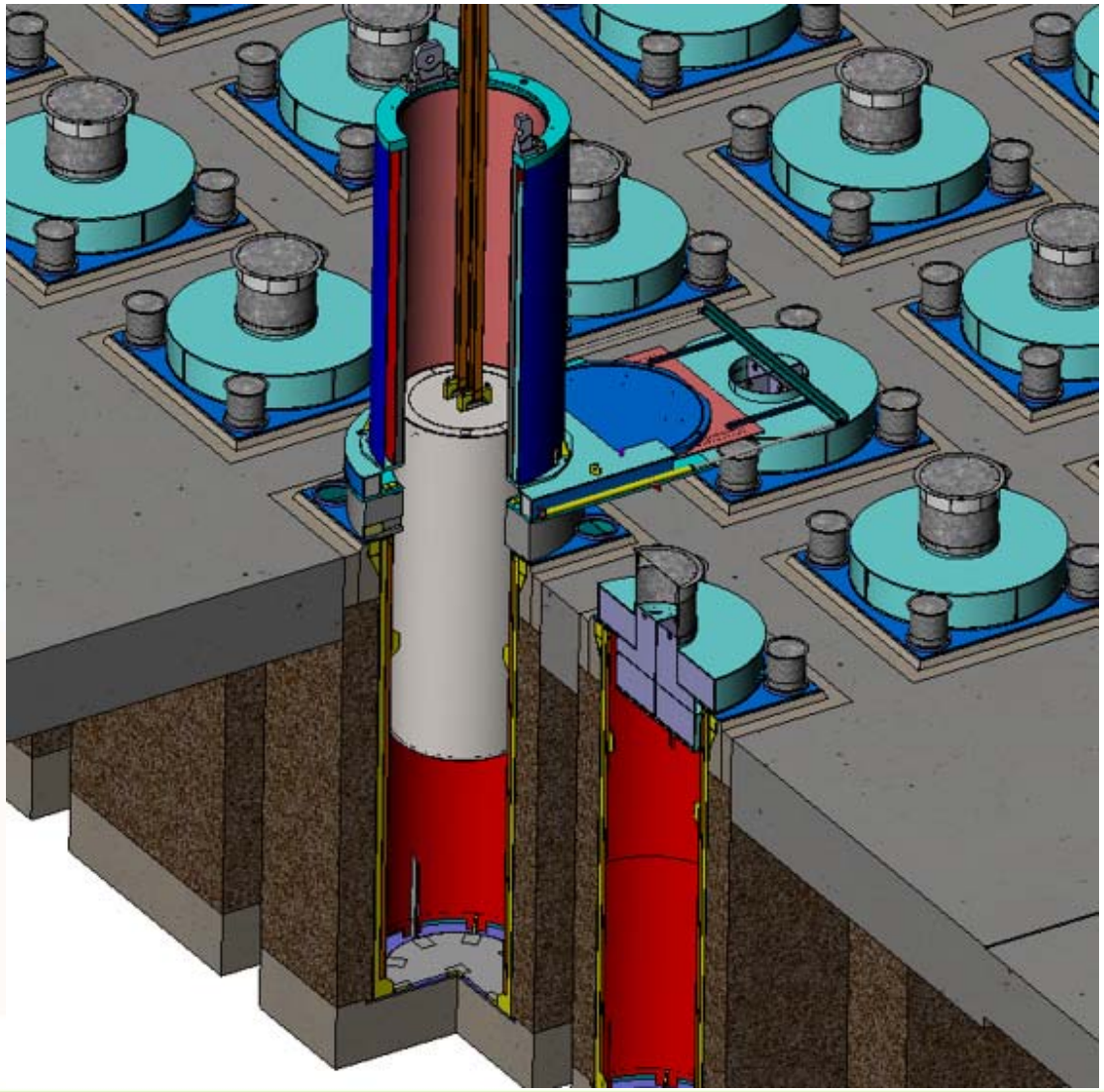
ISFSI Design



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Pad Construction

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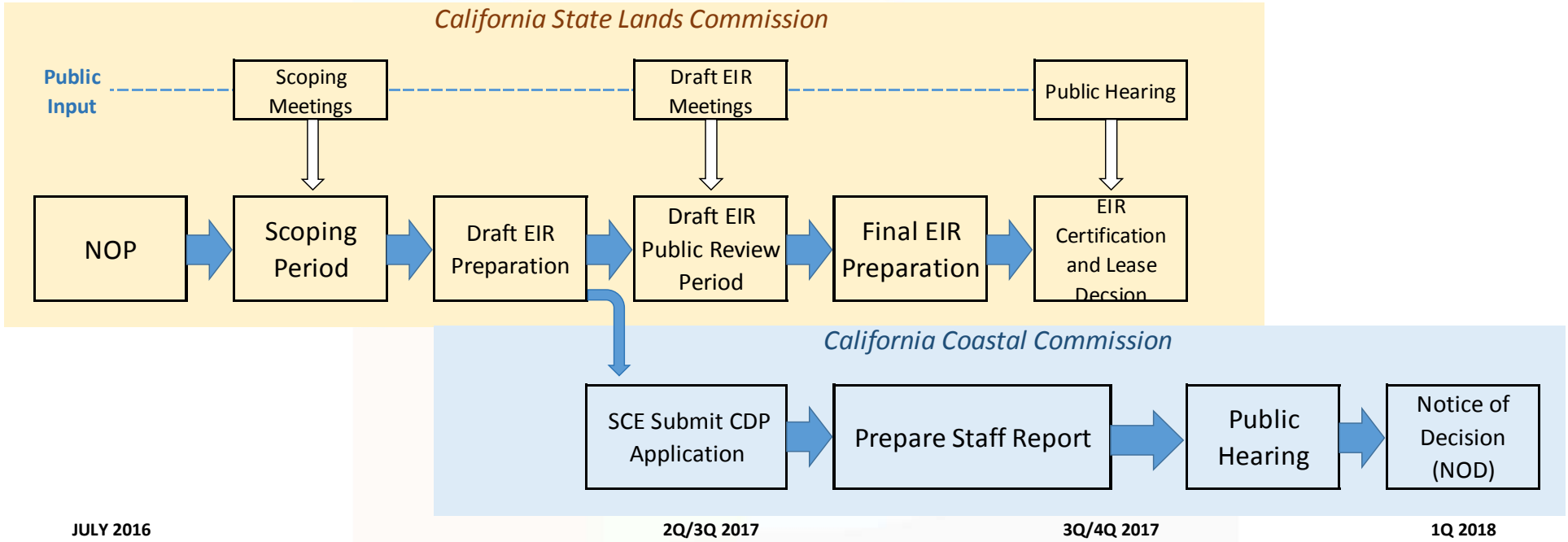
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) UPDATE

Environmental Impact Report (EIR) and Coastal Development Permit (CDP) Processes



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DECOMMISSIONING GENERAL CONTRACTOR (DGC)

SONGS Decommissioning Solutions

- SONGS Decommissioning*Solutions* (SDS) selected as DGC (joint venture of AECOM and Energy*Solutions)*
- Contract effective January 2017
- SDS staff mobilized to site
- Currently planning work
- Physical work to start in 2018
- Project duration 8 to 10 years

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Addressing Questions

Tom Palmisano

Vice President Decommissioning &
Chief Nuclear Officer

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USED FUEL

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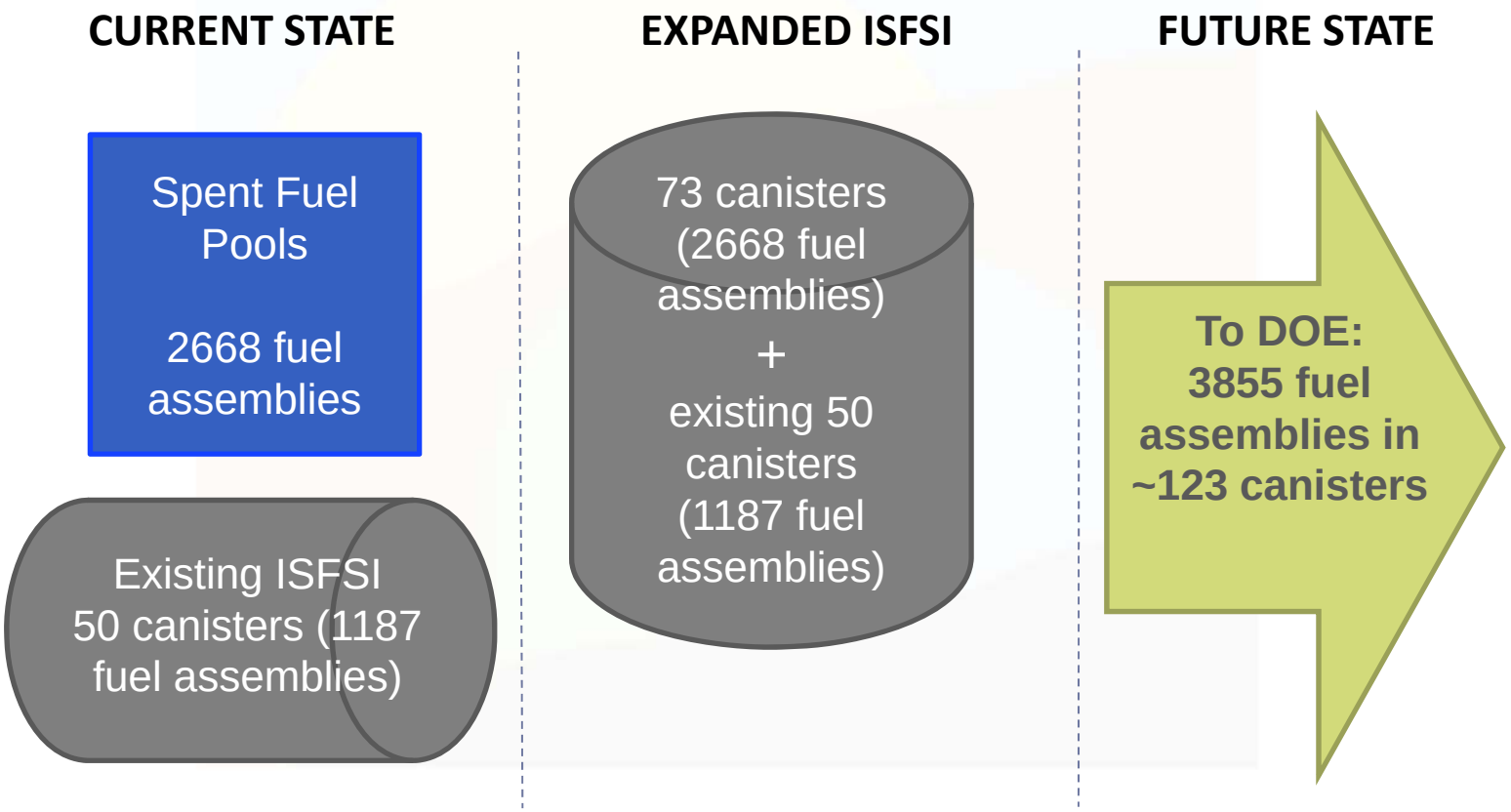
Used Fuel Storage



AREVA ISFSI Capacity Constraints

- Existing AREVA ISFSI has space for 93 modules
- 50 modules currently loaded with spent fuel, 1 with “Greater than Class C” (GTCC) waste from Unit 1
- 12 empty modules on the ISFSI scheduled to be used for Unit 2 & 3 GTCC
- Space available for 30 additional modules
- Insufficient capacity to empty either the Unit 2 or Unit 3 spent fuel pools

Holtec ISFSI

- Evaluation Process
  - Competitive bid process
  - Leading vendors in the industry
  - Demonstrated experience
  - NRC approved design

- 33 sites in the U.S. have the Holtec system in place, including:
    - Calloway
    - Humboldt Bay
    - Diablo Canyon

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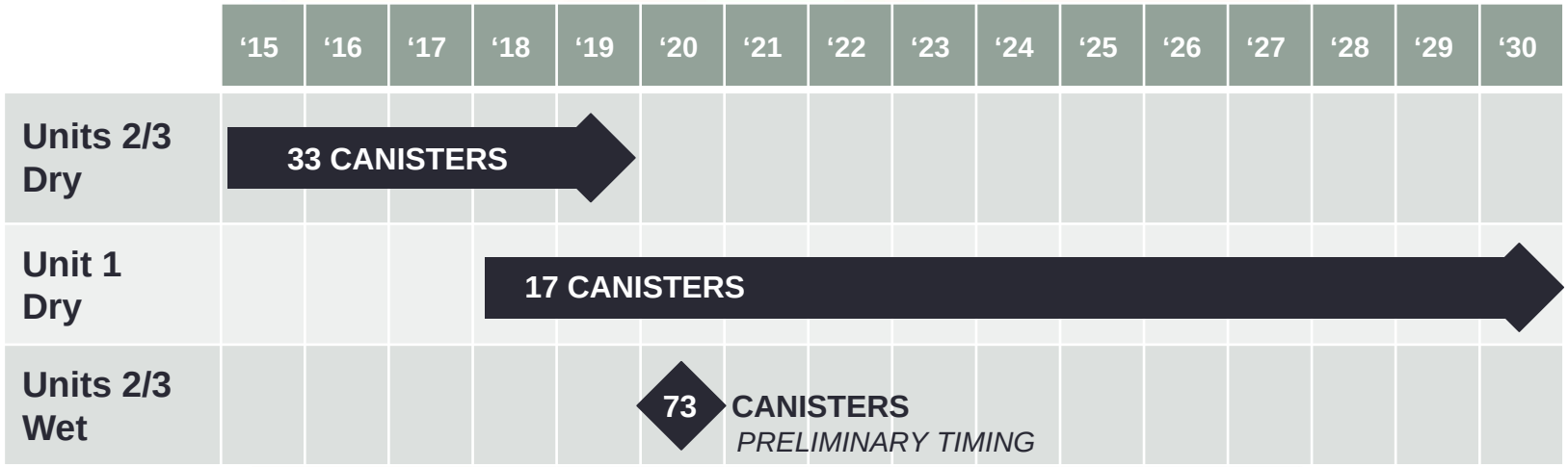
USED FUEL TRANSPORTATION

Fuel Readiness for Transportation

- Transfer estimated at 10 years from start to finish
- Some fuel qualified for transport now
- Other fuel qualifies over time



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Rail Capacity

Main generator rotor shipped form San Onofre
on a 12-axle rail car rated for 750,000 lbs. (375 tons)

Rotor weight 437,000 lbs. (218 tons)

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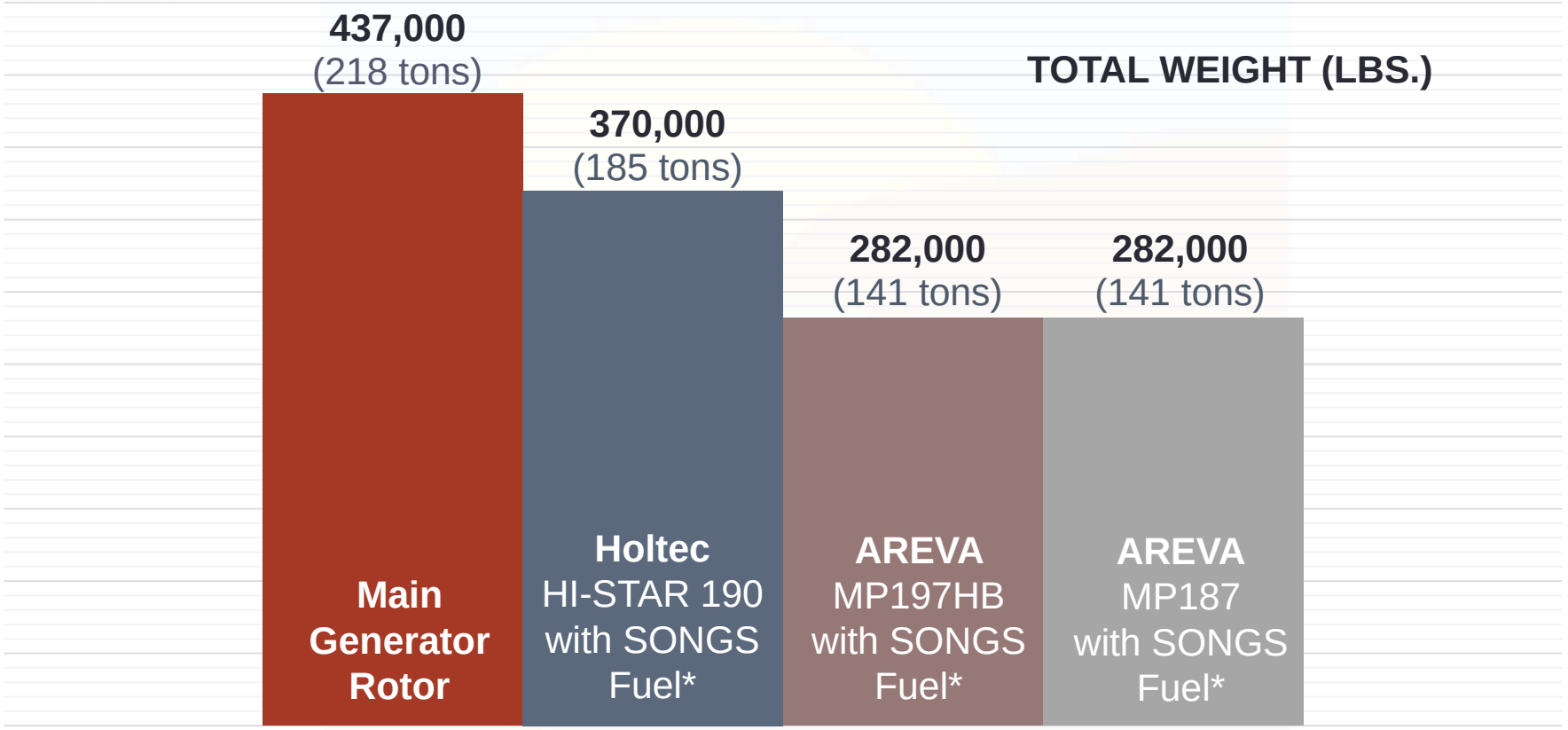
Load Comparison



*Approximate weight of fully loaded San Onofre used fuel transportation cask shipment

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Existing Railcar
U.S. Navy M-290

M-290 system 520,000 lbs. (260 tons) loaded

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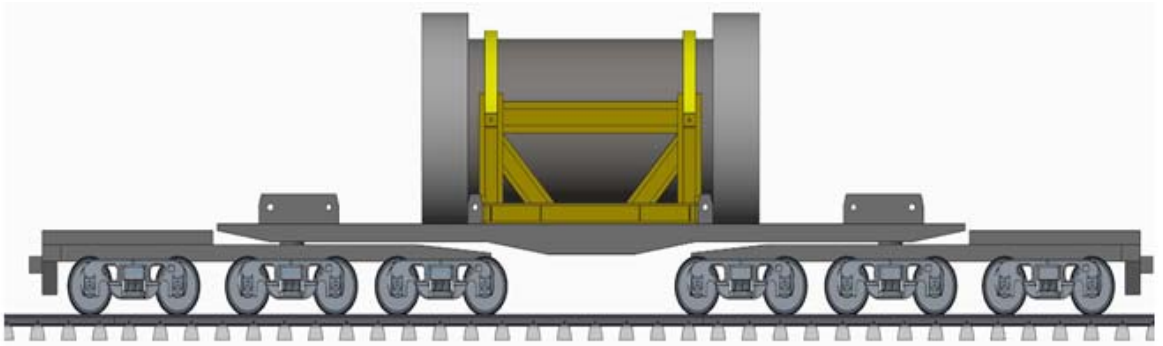
DOE Conceptual Design: Atlas Railcar

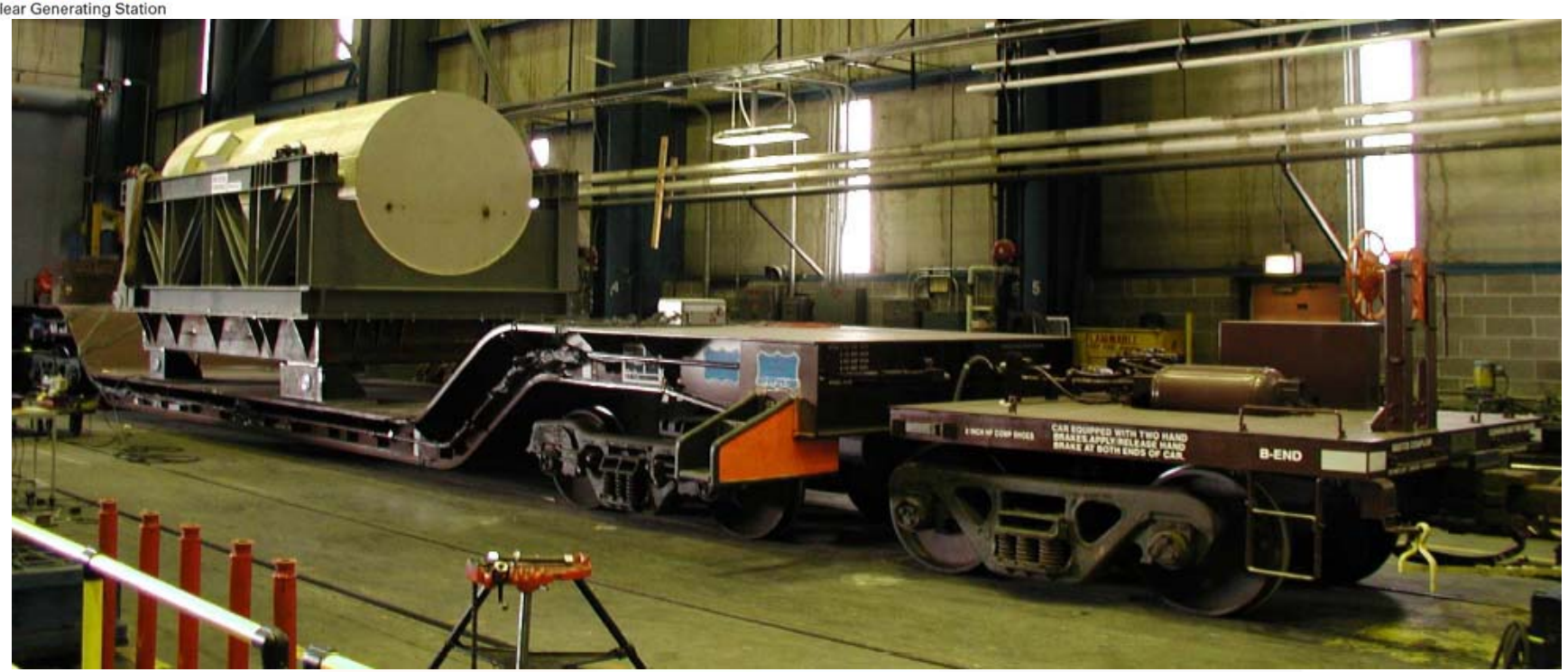


- The Atlas railcar conceptual design has 12 axles.
- The railcar has the same axles and trucks as the Navy's M-290 design.
- The railcar will fit through AAR's clearance Plate E.
- The Phase 1 Final Report and all drawings are available at: https://curie.ornl.gov. Click on the "Search" tab and then enter "atlas railcar" in the search box.

ATLAS TM

U.S. DEPARTMENT OF ENERGY | Office of Nuclear Energy

DOE Concept Rail Car



- Awarded $8.63 million contract to AREVA Federal Services on August 2015
- For development of cask and buffer railcars
- Design specifications will accommodate SONGS canisters

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BENEFITS OF CEP FEEDBACK

CEP-Inspired Initiatives

- Funding for off-site emergency responders
- Heightened focus on used fuel defense in depth
- Canister fabrication to address corrosion
- Plant tours open to the public
- Partnering to:
  - Advance legislation to enable off-site fuel storage
  - Accelerate state-level transportation planning

Thank you!