



**Recapitalization of Infrastructure Supporting
Naval Spent Nuclear Fuel Handling
at the Idaho National Laboratory**

DOE/EIS-0453-F

OCTOBER 2016

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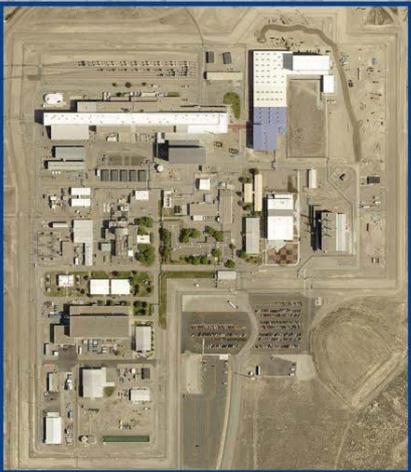
SUMMARY



U.S. DEPARTMENT OF ENERGY
WASHINGTON, DC 20585

**FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
RECAPITALIZATION OF INFRASTRUCTURE SUPPORTING
NAVAL SPENT NUCLEAR FUEL HANDLING**

OCTOBER 2016



DOE/EIS-0453-F

Available at www.ecfrecapitalization.us

Mission Need and Proposed Action



- **Mission Need**
 - Need to receive and package spent fuel for disposal will continue until at least 2060.
 - Existing facility over 55 years old.
 - Increasing expense to continue operations in a safe and environmentally responsible manner.
 - Increasing potential for disruption to operations for emergent repair/replacement of equipment.
- **Proposed Action: Recapitalize the infrastructure for naval spent nuclear fuel handling**
 - Required capabilities include:
 - Receipt of spent fuel
 - Visual examination of spent fuel
 - Packaging of spent fuel for disposal
- Recapitalization of other ECF capabilities will be addressed as separate actions – including additional evaluation under NEPA.

EIS Alternatives



- **Three alternatives were analyzed in the EIS:**
 - **No Action Alternative**
 - Continue use of the Expended Core Facility with routine preventative and corrective maintenance.
 - **Overhaul Alternative**
 - Continue use of the Expended Core Facility with routine preventative and corrective maintenance.
 - Implementation of major refurbishment projects for the ECF infrastructure and water pools.
 - Overhaul of water pools to the extent practical to bring them up to current design and construction standards.
 - Installation of new equipment and processes.
 - **New Facility Alternative (preferred)**
 - Construct a new spent fuel handling facility at NRF.
 - All naval spent fuel handling operations would transition to the new water pool.
 - Spent fuel and test specimen examination work would continue in the Expended Core Facility.

Impacts

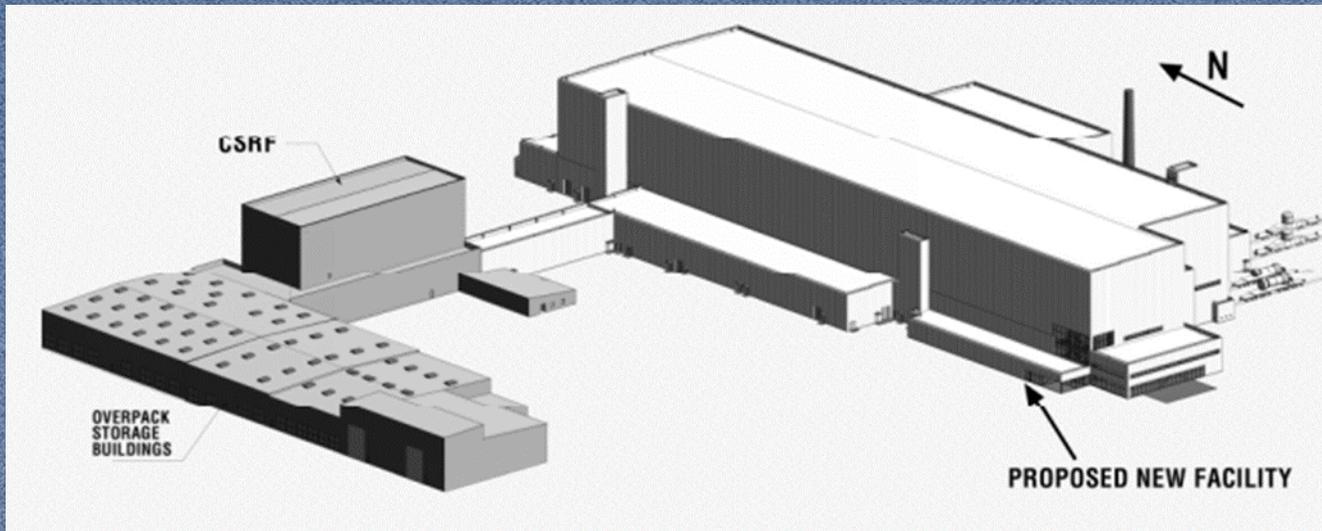


- There are no environmental impacts associated with any of the alternative, or the impacts are negligible or small except for:
 - Seismic hazards (No Action, Overhaul before water pool refurbishment, New Facility before water pool construction)
 - Electrical consumption (New Facility Alternative)
- In consultation with Shoshone-Bannock Tribes the NNPP agreed to acknowledge there would be small unavoidable impacts to cultural resources.
 - No resources eligible or listing on the National Register of Historic Places would be disturbed during new facility construction.

Preferred Alternative



- The EIS identifies the New Facility Alternative as the preferred alternative
 - Improves ability to meet long-term mission needs and future capacities.
 - Increases efficiency by optimizing product flow.
 - Enhances ability to meet Settlement Agreement by providing a more reliable production line.



Preferred Alternative



- **New Facility Alternative**

- The estimated cost is about \$1.65 billion, including over \$500 million for construction.
- If the New Facility Alternative is selected, work is expected to begin in 2017 and continue through the early 2020s.
 - During construction there would be an increase of approximately 360 construction jobs.
 - Construction would be expected to occur over 5 years during this period.

Changes from Draft EIS



- **Comments**
 - All written and oral comments on the Draft EIS were considered in preparing the Final EIS
 - Comments and the NNPP responses are included in Appendix G.
- **Project Changes for the New Facility Alternative**
 - Changes to seismic design strategy
 - Changes to air construction air pollutant emissions
 - Changes in the storm and wastewater management systems

Changes to Seismic Design Strategy for New Facility Alternative



- **Draft EIS**
 - Conservative design strategy
 - Spent nuclear fuel water pool and its surrounding structures would be designed and built to the highest seismic design category
 - Probability of seismic-related failure of 1 in 100,000 per year
- **Final EIS**
 - Seismic design strategy revised
 - Spent nuclear fuel water pool and its surrounding structures would be designed and built to meet current DOE standards
 - Probability of seismic-related failure of 1 in 10,000 per year
 - Major elements of the facility will exceed current DOE requirements
 - Annual risk to the general population for new facility alternative will change slightly relative to the Draft EIS, but will be smaller than the risk for the overhaul alternative

Construction Air Pollutant Emissions



- Updated design and construction information resulted in changes to air pollutant emissions
 - Use of 2 concrete batch plants instead of 1
 - Increased material throughputs for the concrete batch plants
- Air pollutant emission changes did not result in changes to the impact conclusions
 - Impacts would be small
 - Sensitivity analyses showed changes in models did not change conclusions
- Revised air emissions and modeling protocols reviewed with:
 - Idaho Department of Environmental Quality
 - National Park Service

Changes in the storm water and wastewater management systems



- **Construction Period**
 - No storm water from the construction area would be discharged to IWD (Locations 3/4 and 6)
 - Managed on the construction site using Low Impact Development techniques and infiltration basins
 - No discharges to the Big Lost River
 - No additional land clearing or impacts to land use
 - Added potential to discharge up to 5 million gallons of clean water from pool leak testing
- **Transition and Operational Periods – Location 3/4**
 - No storm water discharge to the IWD
 - Storm water would be discharged to lined evaporation ponds

Next Action



- The NNPP expects that a Record of Decision for this project will be made prior to the end of 2016.