

Potential ANL-West Support for the FFTF Decommissioning

Presentation to the INEEL Citizens Advisory Board

September 21, 2004

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ANL-W Work Needed to Support FFTF Closure

- **Converting the Hanford Site radioactive sodium inventory to sodium hydroxide for reuse at Hanford Site**
- **Disposition of 300 kgs. of FFTF Sodium Bonded Fuel**
- **Disposition of Highly Radioactive FFTF Sodium coolant filters.**



Bulk Sodium Reaction

- **Cost** Approximately \$ 31M
- **Basis of Estimate** Hanford Site Sodium Disposition Trade-off Study, April 2002, Prepared for DOE by ANL and Fluor Hanford, Inc.
- **Scope** Receive ~300,000 gallons of metallic sodium, react to 50% NaOH and return to Hanford
- **Time Frame** 2005 to 2009
- **NEPA Coverage** Transportation of sodium to be addressed in FFTF Decommissioning EIS



Bulk Sodium Reaction

Relevant Idaho regulations

- **The Hanford Site radioactive sodium inventory, although not a waste, would be converted to sodium hydroxide at the Sodium Process Facility (SPF) at ANL-West. The SPF would be operated in accordance with its active RCRA hazardous waste treatment permit.**
- **Sodium would be transported in solid form to ANL-W in DOT-approved 4,000 gallon isotanker trucks.**
- **The sodium hydroxide product would be returned to Hanford in DOT-approved 4000 gallon isotanker trucks.**





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Sodium Process Facility (SPF)

U.S. Department of Energy



Disposition of FFTF Sodium Bonded Fuel (cont.)

Relevant Idaho regulations

- **The 1995 DOE/State of Idaho Settlement Agreement allows 12 shipments of Hanford Site Spent Nuclear Fuel to come to Idaho. No Hanford SNF shipments to Idaho have been made thus far.**
- **9 or 10 Shipments would be made using an NRC-licensed T-3 cask transport system.**
- **At ANL-W, the FFTF sodium-bonded SNF would be converted to low-enrichment uranium and two high-level waste forms destined for Yucca Mountain. This material would be removed from Idaho before 2035.**



Fuel Conditioning Facility at ANL-W



FCF plays the central role in EBR-II sodium-bonded spent fuel treatment. Successful treatment of EBR-II spent fuel may mean that the process could be used for treatment of other problematic DOE spent fuels, resulting in common waste forms suitable for disposal.



Disposition of Highly Radioactive FFTF System Components

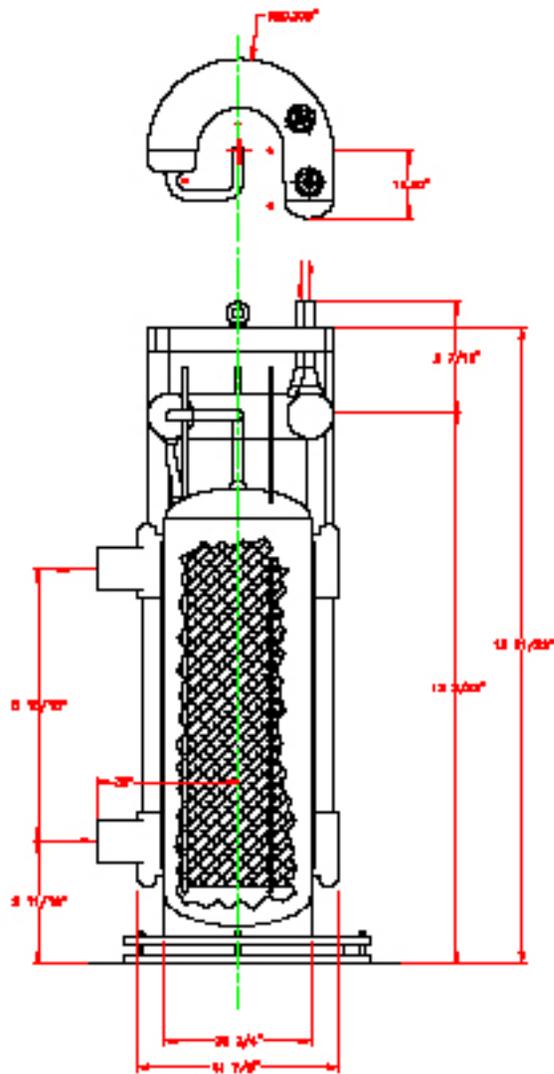
- **Cost** Approximately \$ 23M
- **Basis of Estimate** Experience with cleaning contact-handled EBR-II sodium filters, and hot cell operations
- **Scope** Disposition of the FFTF cesium filters, primary sodium filters and two primary vapor filters in conjunction with similar EBR-II filters. All filters are considered mixed waste.
- **Time Frame** 2010+
- **NEPA Coverage** Transportation of sodium filters to be addressed in FFTF Decommissioning EIS. Treatment (sodium removal) of the filters to be addressed in the Remote Treatment Project Environmental Assessment



Disposition of Highly Radioactive FFTF System Components

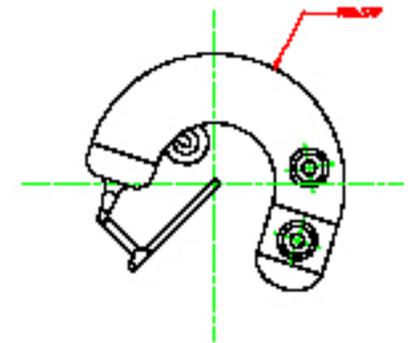
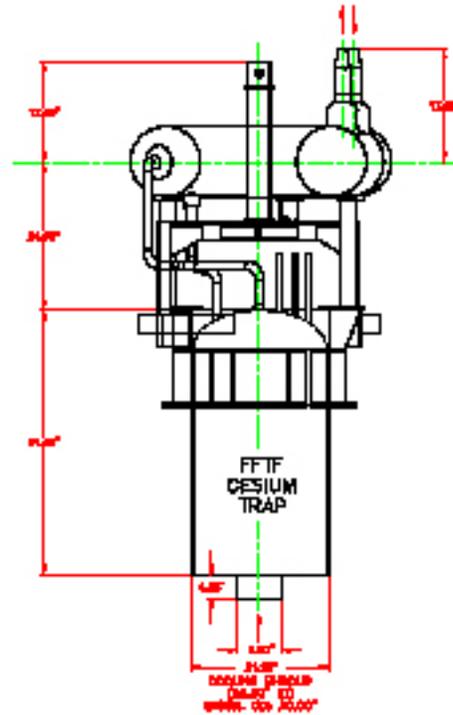
- **Relevant Idaho Regulations-**
- **The Idaho Hazardous Waste Management Act (HWMA) governs mixed waste storage and treatment in Idaho**
- **The proposed Remote Treatment Project is planned to be a HWMA-permitted mixed waste treatment facility**
- **The INEEL Site Treatment Plan Consent Order allows treatment of mixed waste from out of Idaho as long as it stays for less than 12 months and the treated residuals are disposed of out of state.**





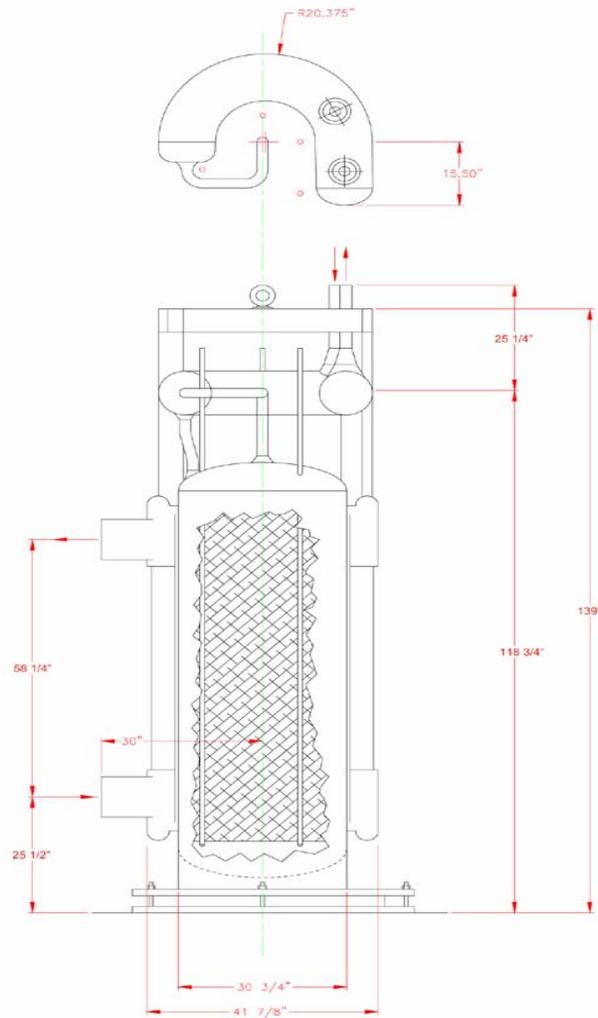
IDS AND PRIMARY SODIUM STORAGE COLD TRAP (N-46) AND SECONDARY COLD TRAPS (N-7, N-40, N-41)

TYPE II



FFF CESIUM COLD TRAP
TYPE CT w/TYPE II ECONOMISER

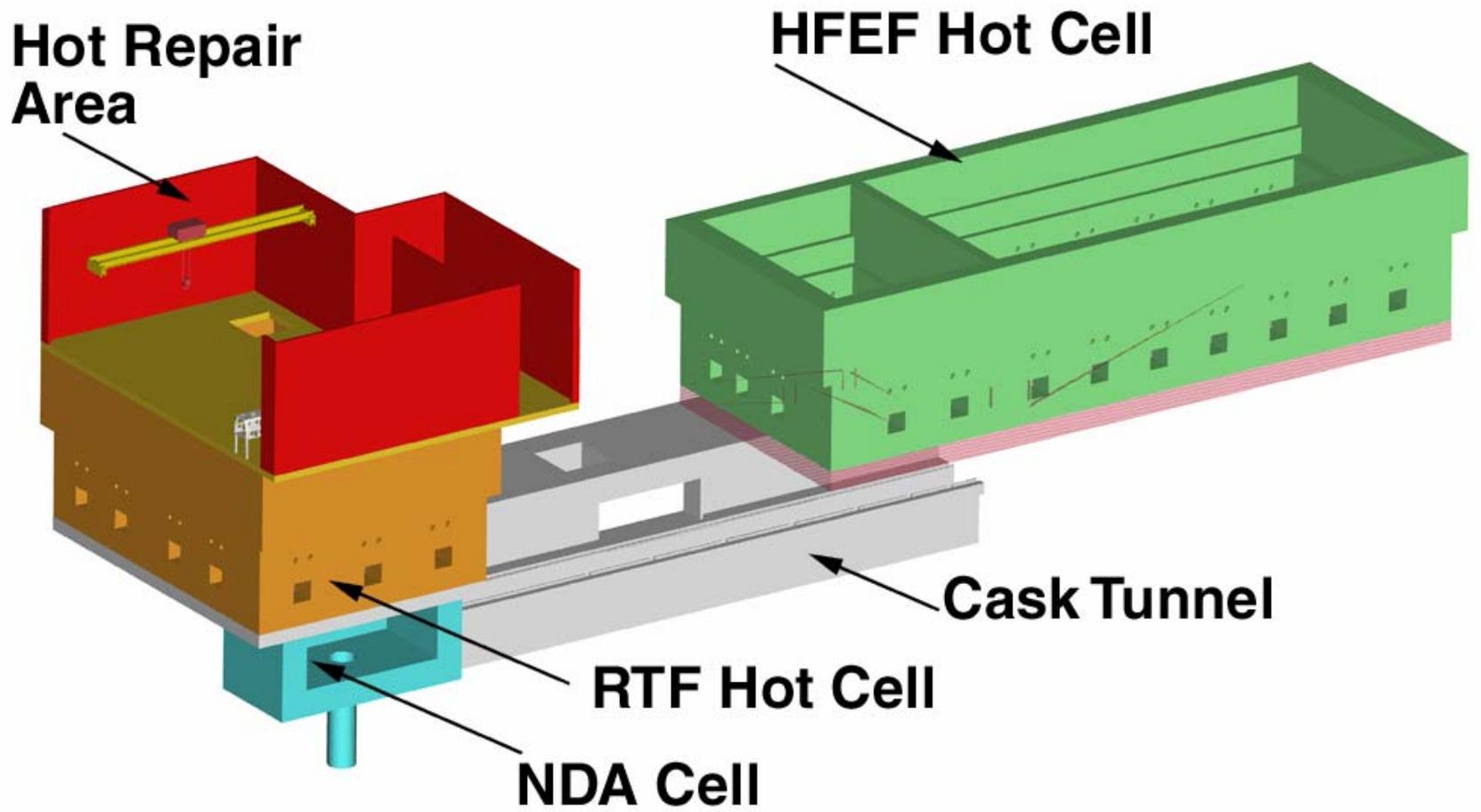




IDS AND PRIMARY SODIUM STORAGE COLD TRAP (N-46) AND SECONDARY COLD TRAPS (N-7, N-40, N-41)

TYPE II





The FFTF EIS Process

- **Scoping:** The DOE seeks public input on which alternatives it should analyze for environmental consequences. Comments may be submitted to DOE by letter, e-mail, Fax or verbally. The Idaho Falls Scoping meeting is September 30th from 7-10 PM at the Shilo Inn.
- **Public comments on Draft EIS:** The Draft EIS goes to the public for comment in February of 2005. The comment period lasts for at least 45 days.
- **The final EIS is written based on comments received from the public and other government and non- government organizations.**
- **The Final EIS is scheduled for completion by September 2005 with a Record of Decision issued by December of 2005.**

