

Change Number M-81-94-01	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date 1/13/95																								
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Class of Change <input checked="" type="checkbox"/> I - Signatories <input type="checkbox"/> II - Project Manager <input type="checkbox"/> III - Unit Manager																										
Change Title Establish milestones and target dates for the Fast Flux Test Facility (FFTF) transition, Milestone Series M-81.																										
Description/Justification of Change The FFTF transition project has been developed to establish a safe and environmentally secure configuration for the FFTF and to transition the facility to the Surveillance and Maintenance (S&M) Phase. Transition activities consist of, but are not limited to: 1) defueling the reactor, 2) dry cask storage of irradiated fuel, 3) unirradiated fuel transfer to the Plutonium Finishing Plant (PFP), 4) transfer of sodium-bonded irradiated metal and carbide fuel pins to the Idaho National Engineering Laboratory, 5) construction of a sodium storage facility, 6) sodium drain and storage, and 7) deactivation of the auxiliary systems. During these transition activities, worker and public safety will be maintained. When transition is complete, the FFTF will be in a radiologically and industrially safe and secured configuration with reduced risk to plant workers, the public, and the environment. The stored sodium will be converted to an acceptable form and either used as a product by DOE's Tank Waste Remediation System (TWRS) tank waste pretreatment process, or properly disposed. After the FFTF transition is complete, the plant will be routinely monitored until decommissioning is completed. (See Attachment)																										
Impact of Change This change request establishes one new major milestone, interim milestones and target dates for the transition of the FFTF complex. These milestones do not impact any other Tri-Party Agreement interim or major milestones.																										
Affected Documents Hanford Federal Facility Agreement and Consent Order, Appendix D																										
Approvals This change form approved by Amendment Five to the Hanford Federal Facility Agreement and Consent Order executed by the signatories on July 28, 1995. _____ DOE J. D. Wagoner _____ EPA C. Clarke _____ Ecology M. Riveland		<table border="0"> <tr> <td>_____</td> <td>_____</td> <td>___ Approved</td> <td>___ Disapproved</td> </tr> <tr> <td>Date</td> <td></td> <td></td> <td></td> </tr> <tr> <td>_____</td> <td>_____</td> <td>___ Approved</td> <td>___ Disapproved</td> </tr> <tr> <td>Date</td> <td></td> <td></td> <td></td> </tr> <tr> <td>_____</td> <td>_____</td> <td>___ Approved</td> <td>___ Disapproved</td> </tr> <tr> <td>Date</td> <td></td> <td></td> <td></td> </tr> </table>	_____	_____	___ Approved	___ Disapproved	Date				_____	_____	___ Approved	___ Disapproved	Date				_____	_____	___ Approved	___ Disapproved	Date			
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Milestones and Target Dates for FFTF Transition

The decommissioning process for FFTF will be accomplished in three phases: Phase I (Facility Transition), Phase II (Surveillance and Maintenance [S&M]), and Phase III (Disposition). Major and interim milestones and target dates are being established to address the transition of the FFTF. The transition activities will place the FFTF and supporting facilities in a radiologically and industrially safe condition such that they can be decommissioned at a later date. A new facility required to support the transition of FFTF is the Sodium Storage Facility. A sodium reaction facility will also be constructed to convert the sodium to an acceptable form for reuse or disposal. These new facilities will be constructed adjacent to the FFTF complex to support sodium drain operations and subsequent sodium conversion.

The FFTF complex (e.g., the FFTF, Sodium Storage Facility and Sodium Reaction Facility) will undergo a two step turnover process to Hanford's Environmental Restoration Program. The first step is the turnover of the FFTF when the final FFTF transition state has been achieved. The second step will consist of turnover of the Sodium Storage Facility and Sodium Reaction Facility at a later date, after the sodium has been converted and these facilities have been placed in an appropriate end point state. Present planning is that FFTF will be unoccupied and locked, with the exception of maintaining a minimal amount of lighting, fire protection equipment, inert gas supply to the drained sodium systems, and ventilation required to support routine surveillance. When this state is achieved, it is expected that funds will be available for higher priority environmental management activities.

Throughout the FFTF transition project, opportunities to implement waste minimization activities will continue to be assessed and implemented to the extent possible. Waste minimization activities during the project include the recycle, reuse or return to the original vendor of process fluids from the plant systems and auxiliary equipment (i.e., ethylene glycol, fuel oil, mobiltherm oil, and cooling tower chemicals). Only minor amounts of chemicals such as polychlorinated biphenyl transformer oils will require disposal as hazardous waste. An innovative approach to waste minimization and planning was implemented during the early stages of the FFTF transition project that will save significant time and resources. The milestones for reactor defueling, fuel washing, potential reuse of the bulk sodium, and accelerated construction of the Sodium Storage Facility reflect an expeditious and cost efficient approach.

The FFTF transition project has been developed with an eye to ensuring that public participation vital to the success of this project, and in accordance with Section 10.0 of the TPA, will be achieved and maintained.

Section 3.1 of the Hanford Federal Facility Agreement and Consent Order supports development of milestones and target dates to address "transition" activities at the FFTF. Establishing milestones and target dates for FFTF transition activities will result in an expeditious and cost efficient transition to a radiologically and environmentally safe shutdown condition while minimizing impacts to human health and the environment. The interim milestones and target dates identified below, reflect the actions necessary to achieve FFTF facility transition and initiate the surveillance and maintenance phase, and in most cases have been selected based on the critical path schedule for FFTF transition. The target dates correspond to actual planning dates and reflect efforts to accelerate the Sodium Storage Facility.

Establish the following milestones and target dates:

- M-81-00 Complete FFTF Facility Transition and initiate the Surveillance and Maintenance phase. December 2001
- This major milestone will be achieved by completion of all activities necessary to achieve the end point criteria for placing the facility in a safe and stable surveillance and maintenance mode.
- M-81-00-T01 Complete Reactor Defueling. September 1995
- At the completion of defueling, there will be 236 non-fueled components in the reactor vessel, 113 fueled components in the Interim Decay Storage and 258 fueled components in the Fuel Storage Facility.
- M-81-00-T02 Complete transfer of irradiated fuel to dry cask storage. October 1998
- The irradiated fuel assemblies and pin containers will be transferred from the Interim Decay Storage Vessel and the Fuel Storage Facility to the IEM Cell for residual sodium removal, loaded into a Core Component Container, transferred to the Reactor Service Building Cask Loading Station for placement into an Interim Storage Cask for dry storage, and transferred to the Interim Storage Area located in the northeast corner of the FFTF complex.
- M-81-00-T03 Complete transfer of unirradiated fuel to the Plutonium Finishing Plant. October 1998
- Thirty-two unirradiated fuel assemblies presently stored in the Interim Decay Storage Vessel will be transferred to the IEM Cell for washing and drying, loaded into existing approved shipping containers, and transferred to an appropriate storage area in the Plutonium Finishing Plant.
- M-81-00-T04 Complete transfer of special fuel to the Idaho National Engineering Laboratory for consolidated storage. October 1998
- Sodium-bonded irradiated metal and carbide fuel pins from assemblies cleaned and disassembled in the IEM Cell will be loaded into existing, approved shipping casks, and transported to the Idaho National Engineering Laboratory in Idaho Falls, Idaho, for consolidated storage. One unirradiated metal fuel assembly will also be dispositioned in a similar manner.
- M-81-00-T05 Complete auxiliary systems deactivation. March 2001
- A major portion of the plant auxiliary systems are required to support hot sodium circulation prior to draining the sodium. As these systems, and the balance of plant systems, become available for shutdown, they will be deactivated to a safe, stable condition.
- M-81-01 Initiate Sodium Storage Facility Construction. February 1997
- This milestone will be achieved when the construction contractor is issued the Notice to Proceed with construction by the Contracting Officer.

M-81-02 Complete Sodium Storage Facility startup. July 1998

This milestone will be achieved by completion of the Sodium Storage Facility startup activities which include final testing of the mechanical and electrical systems and confirmation that the facility is ready to receive sodium from FFTF. Construction of the new facility closely coupled to the FFTF complex is required to support sodium drain operations. This new facility will be designed, constructed and operated in compliance with RCRA and WAC 173-303 storage requirements. The facility will provide storage capacity for the 260,000 gallons of FFTF metallic sodium coolant.

M-81-02-T01 Submit sodium disposition evaluation report/decision point. June 1998

Complete an evaluation of the acceptable sodium product form for the TWRS tank sludge pretreatment process (i.e., caustic washing). This evaluation will be conducted in concert with TWRS TPA milestone M-50-03 (due date March 31, 1998). The FFTF evaluation will address other conversion options for disposal of the sodium if the product use for TWRS is not viable. Regardless of which option is selected, a new sodium reaction facility will be constructed adjacent to the Sodium Storage Facility to convert the bulk metallic sodium to the appropriate chemical form. This includes a decision on the final disposition of the sodium (e.g., disposal or re-use). Appropriate milestones and target dates will be established for construction and operation of the Sodium Reaction Facility based on the option selected.

M-81-03 Submit FFTF End Point Criteria Document. December 1998

A document identifying the end point criteria necessary to place the FFTF in a safe and stable configuration will be developed. This document will be provided to EPA and Ecology for review, and approval for the hazardous substances proposed to remain at the facility.

M-81-04 Complete FFTF sodium drain. March 2000

This milestone will be complete when all of the sodium coolant has been drained from the plant to the new Sodium Storage Facility to the maximum practical extent. The sodium residuals that remain are integral to the system, are solid in form, and adhere to the surfaces of the system components. The residuals will be maintained under an inert gas blanket to minimize potential reactions during the long-term surveillance and maintenance phase. During final disposition of the facility, any regulated wastes generated from the cleaning or dismantlement of these systems, will be appropriately managed.

M-81-04-T01 Complete Reactor and Heat Transport System sodium drain. April 1998

The Reactor and Primary and Secondary Heat Transport System sodium coolant and supporting sodium systems will be maintained in a safe configuration, molten and circulating until the fuel is removed from the FFTF reactor vessel and the Sodium Storage Facility is operational. The sodium will then be drained to the tanks located in the Sodium Storage Facility and allowed to freeze.

M-81-04-T02 Complete Interim Decay Storage Vessel and Fuel Storage Facility sodium drain.

December 1998

The Interim Decay Storage Vessel and Fuel Storage Facility sodium will be maintained in a molten state until the fuel is removed from these storage locations. The sodium will then be drained to the tanks located in the Sodium Storage Facility and allowed to freeze.

M-81-05 Submit FFTF Surveillance and Maintenance Plan.

June 2001

A plan describing the S&M activities to occur at FFTF during the S&M phase will be developed. This plan will be provided to EPA and Ecology for review, and approval for the hazardous substances proposed to remain at the facility. This plan will include documentation of lists of hazardous substances, including dangerous waste that remain in the FFTF facility upon completion of Phase I activities because the hazardous substance: (1) contains non-dangerous waste components that are highly radioactive, (2) is part of the plant structure and/or (3) is an intact piece(s) of equipment.

M-81-06 Complete PCB Transformer Disposal.

September 2001

The nineteen Polychlorinated Biphenyl (PCB) electrical transformers at the FFTF will be disposed of after the transformers are removed from service. Twelve of the nineteen transformers, will be drained, flushed and removed from FFTF within thirty days after being removed from service as specified in 40 CFR 761. Seven of the transformers, which are in areas that are difficult to obtain access, will be drained, flushed and removed from FFTF within nine months of cessation of service to ensure their disposal within one year from the start of storage. Cessation of service constitutes the start of the storage, and 40 CFR 761 limits this storage and subsequent disposal to a one-year period.

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IT IS SO AGREED:

Each undersigned representative of a Party certifies that he or she is fully authorized to enter into this Agreement and Action Plan and to legally bind such Party to this Agreement and Action Plan. These change requests and amendments shall be effective upon the date on which this fifth amendment agreement is signed by the Parties. Except as amended herein, the existing provisions of the Agreement shall remain in full force and effect.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

for Charles F. Clarke 7/26/95
Chuck Clarke Date
Regional Administrator
Region 10
U.S. Environmental Protection Agency

FOR THE UNITED STATES DEPARTMENT OF ENERGY:

John Wagoner 7/25/95
John Wagoner Date
Manager
U.S. Department of Energy
Richland Operations Office

FOR THE WASHINGTON STATE DEPARTMENT OF ECOLOGY:

Mary Riveland 7/27/95
Mary Riveland Date
Director
State of Washington
Department of Ecology