

Change Number M-34-93-01	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date Jan. 25, 1994
Originator K. Michael Thompson		Phone 376-6421
Class of Change <input checked="" type="checkbox"/> I - Signatories <input type="checkbox"/> II - Project Manager <input type="checkbox"/> III - Unit Manager		
Change Title Remediation of the K-Basins		
Description/Justification of Change It is the common goal of DOE, Ecology and EPA to reduce a source of groundwater contamination from nuclear materials that have leached into the K-East Basin water. It is also the common goal of DOE, Ecology and EPA to move the fuel and sludge (once encapsulated) from the K-East Basin and the encapsulated materials from K-West Basin to a safer long-term storage facility and to remediate both basins as part of the 100-KR-02 CERCLA Past Practice Operable Unit activities. To meet these goals, the following Tri-Party Agreement milestones have been set:  * M-34-01 Contaminated K-East basin water will be removed, replaced, or treated. The timing of this action must be coordinated with encapsulation and the cleaning of the residual contamination in the basin and (as noted below) the alternative selection is dependant on the feasibility of moving encapsulated K-East Basin fuel and sludge to the K-West Basin. The contaminated water will be dispositioned in accordance with reasonable available Hanford Site treatment and/or disposal processes and methods, available at the time of this action. Unless a better option becomes available, the water will be trucked to C-018 for disposal.  <b>RECEIVED</b> MAR 17 2003 (Continued on next Page)		
Impact of Change None		
Affected Documents Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Appendix D.		
Approvals <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved This change form approved by Amendment Four to the Hanford Federal Facility Agreement and Consent Order executed by the signatories on January 25, 1994.  John Wagener _____ January 25, 1994 DOE Date  Gerald Emison _____ January 25, 1994 EPA Date  Mary Riveland _____ January 25, 1994 Ecology Date		

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If the K-East fuel and sludge, once encapsulated, can be moved to the K-West Basin (determined through a September, 1994 engineering study target date) the removal and disposal of the contaminated water shall be completed by September, 2000. This date is an eighteen month action, starting in March, 1999, three months after fuel and sludge encapsulation is completed. If the transfer of encapsulated K-East Basin fuel and sludge to K-West Basin is infeasible, contaminated K-East Basin water will be replaced by fresh water, starting in September, 1996 at a rate of two million gallons/year and will continue until such time that the tritium concentration in the basin is decreased and is maintained at or below 300,000 pCi/L (The goal is to reduce the tritium concentration in the basin such that resulting groundwater tritium concentration meet drinking water concentration standards, recognizing a lag between basin and groundwater concentrations.

- \* M-34-02 June, 1996 - Initiate negotiations with Ecology and EPA on incorporation of transition activities including stabilization of the basins, consistent with Section 3.1 of the Agreement (as amended) and the Record of Decision regarding long-term storage and ultimate disposition of the irradiated fuel. DOE will submit a signed Tri-Party Agreement change request proposing milestones for (1) the completion of removal of fuel and sludges from the K-Basins and (2) the completion of stabilization of the basins.
- \* M-34-00 Complete actions specified by agreed interim milestones related to remediation of the K-East Basins. Due Date: TBD

K-East Basin is an unlined rectangular, reinforced concrete basin, 125 feet long, 67 feet wide, 21 feet deep, with a cooling/shielding water depth of approximately 16 feet. The basin has a water recirculation system including filters, ion exchange and chillers. K-East basin was constructed in the early 1950's and operated in support of KE Reactor until 1971. The basin was reactivated in 1975 for short-term storage of N Reactor fuel. Approximately 1144 metric tons of irradiated metallic uranium fuel, contained in open-ended canisters and approximately 2,000 empty canisters are stored in the K-East Basin. Approximately 800 cubic feet of sludge and approximately 500 cubic feet of debris rest on the basin floor. Unlike the K-West Basin it is not epoxy lined and the nuclear materials stored there are not encapsulated.

It is the intent and long-term goal of DOE to remove all nuclear fuel and sludge from both the K-East Basin and the K-West Basin; however, a suitable facility is not presently available as an alternate storage facility. The DOE decision for long-term storage and ultimate disposition of the fuel is dependent upon the ROD of the EIS to be conducted regarding the fuel. DOE will develop options and plans concurrently with the EIS process to expedite the implementation of the decision.

The DOE is presently planning to encapsulate the fuel and sludge stored in K-East Basin to prevent further degradation of the exposed fuel and to provide an additional environmental containment barrier. Encapsulation is also necessary prior to the effective treatment of the water in the basin. Materials stored in K-West Basin are encapsulated. DOE is also assessing the possibility of reracking encapsulated materials in K-West Basin and moving materials from K-East Basin once encapsulated.

Ecology, EPA and DOE have agreed to attach target dates on key activities for the encapsulation, disposition of the fuel and sludge, and the initiation of the NEPA process that will determine the long-term storage and ultimate disposition of the fuel and sludge. Target dates are justified because the potential source for groundwater degradation, contaminated water in K-East basin, will be cleaned-up under TPA milestones, dependant on encapsulation. Failure to meet the target dates because of factors within the control of DOE will not be grounds for changing the enforceable milestone for contaminated water

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disposition. DOE has determined that the NEPA process is required to determine long-term storage and ultimate disposition of the nuclear materials. Encapsulation target dates, and the subsequent TPA milestone, are dependant on timely receipt of necessary permits and regulatory approvals necessary to proceed.

The following target dates have been selected:

M-34-00-T01 June, 1994 - Issue Notice of Intent for N-Reacto Fuel EIS.

M-34-00-T02 June, 1994 - Initiate K-East Basin fuel encapsulation.

M-34-00-T03 September, 1994 - Submit an engineering study to determine the feasibility of moving and temporarily storing K-East fuel and sludge (once encapsulated) to the KW-Basin.

M-34-00-T04 October, 1994 - Submit a schedule describing activities for the final disposition of contaminated K-East Basin water for planning purposes to support the 100-KR-4 Record of Decision.

M-34-00-T05 March, 1995 - DOE shall provide a schedule for fuel and sludge encapsulation and contaminated water removal or replacement to Ecology and EPA that supports the TPA milestone

M-34-00-T06 June, 1996 - Initiate K-East Basin sludge encapsulation.

M-34-00-T07 December 1998 - Complete encapsulation of the fuel and sludge within K-East Basin.

M-34-00-T08 December, 2002 - Remove all fuel and sludge from both K-East and K-West Basins in an encapsulated form.

FINAL REVISIONS

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 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:

*Gerald Emison*  
Gerald Emison  
Acting Regional Administrator  
Region 10  
U.S. Environmental Protection Agency

1-25-94  
Date

FOR THE UNITED STATES DEPARTMENT OF ENERGY:

*John D. Wagoner*  
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Manager  
U.S. Department of Energy  
Richland Operations Office

1/25/94  
Date

FOR THE WASHINGTON STATE DEPARTMENT OF ECOLOGY:

*Mary Riveland*  
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State of Washington  
Department of Ecology

1/25/94  
Date

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