



U.S. Department of Energy  
**Office of River Protection**

0059059

P.O. Box 450  
Richland, Washington 99352

03-ED-057

APR 16 2003

Mr. Tom C. Fitzsimmons, Director  
State of Washington  
Department of Ecology  
P.O. Box 47600  
Olympia, Washington 98504

Mr. L. John Iani, Regional Administrator  
U.S. Environmental Protection Agency  
Region 10  
1200 Sixth Avenue  
Seattle, Washington 98101

RECEIVED  
APR 17 2003

EDMC

Dear Addressees:

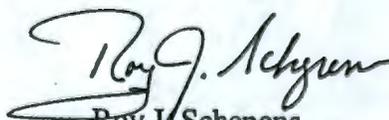
RESOLUTION AND CONCLUSION OF NEGOTIATIONS AGREEMENT FOR HANFORD  
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (HFFACO) CHANGE  
REQUEST M-45-02-03 FOR MILESTONE M-45-00C

I am pleased to submit Change Control Form M-45-02-03 for interim Milestone M-45-00C. Over the past ten months, staff from the State of Washington Department of Ecology and the U.S. Department of Energy (DOE), Office of River Protection have worked in a cooperative professional manner to successfully resolved the HFFACO M-45-00C dispute. Following conclusion of the 45-day public comment period, staff from both agencies jointly reviewed and responded to comments. Public comment did not necessitate revision to the proposed change request.

As you can see, I have signed the form as signatory on behalf of DOE and request that you do likewise on behalf of your organizations. Following your approval, the attached M-45-02-03 Change Request will be incorporated into the HFFACO.

If you have any questions, please contact me, or your staff may contact James E. Rasmussen, Environmental Division, (509) 376-2247.

Sincerely,

  
Roy J. Schepens  
Manager

ED:WR

Attachment

cc: see Page 2

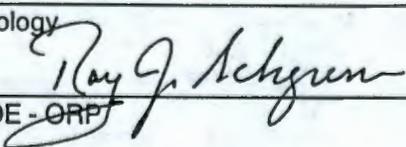
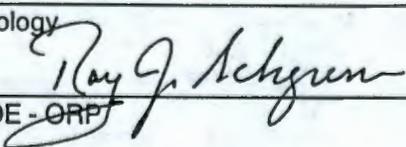
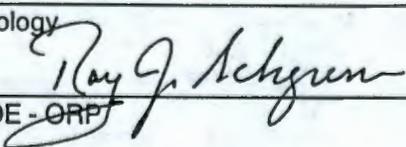
002302

Addressees  
03-ED-057

-2-

cc w/o attach:

D. Allen, CHG  
M. Jarayssi, CHG  
S. B. Fowler, CHG  
R. Gay, CTUIR  
L. Cusack, Ecology  
S. L. Dahl, Ecology  
M. A. Wilson, Ecology  
D. Bartus, EPA c/o Ecology  
N. Ceto, EPA  
J. S. Hertzal, FHI  
T. Martin, HAB  
J. L. Hanson, INNOV  
P. Sobotta, NPT  
K. Niles, Oregon DOE  
J. B. Hebdon, RL  
K. A. Klein, RL  
E. M. Mattlin, RL  
R. Jim, YN  
TPA Administrative Record (w/attach)

<b>Change Number</b> M-45-02-03	<b>Federal Facility Agreement and Consent Order  Change Control Form</b> Do not use blue ink. Type or print using black ink.	<b>Date</b> August 14, 2002																
<b>Originator</b> Ecology/DOE-ORP		<b>Phone</b>																
<b>Class of Change</b> <input checked="" type="checkbox"/> I – Signatories <input type="checkbox"/> II – Executive Manager <input type="checkbox"/> III – Project Manager																		
<b>Change Title</b> Modification of <u>Hanford Federal Facility Agreement and Consent Order</u> (HFFACO) requirements regarding retrieval and closure of Hanford site single-shell tanks (SSTs). Establishment of SST retrieval and closure demonstration projects, associated regulatory (hazardous waste facility closure and post-closure plan and the Hanford Facility RCRA Permit (Permit WA7890008967) [site-wide permit]) process documentation requirements, and related double-shell tank space optimization activities. Resolution of the Department of Energy's (DOE) and Department of Ecology's (Ecology) M-45-00C HFFACO dispute.																		
<b>Description/Justification of Change</b> <b>Structure and Description of the Parties' SST system Closure Plan:</b> Accelerated SST system closure activities are dependent upon successful modification of the Hanford Facility RCRA Permit (Site-wide Permit) (WA7890008967) through addition of the SST system Closure Plan. Basic agency roles and responsibilities include DOE-ORP drafting the Closure Plan and Ecology, as the decision maker, reviewing the Closure Plan, issuing the draft Closure Plan with permit conditions that direct closure activities, and issuing the document for public comment. After public comment is taken into account, the Permit will be modified with the final Closure Plan and associated Permit conditions. At this point, closure actions can commence at demonstration tanks.																		
<b>Impact of Change</b> This change request modifies <u>Hanford Federal Facility Agreement and Consent Order</u> (HFFACO) requirements regarding retrieval and closure of Hanford site single-shell tanks (SSTs), i.e., establishment of SST retrieval and closure demonstration projects, associated regulatory (hazardous waste facility closure plan and site-wide permit) process documentation schedules, and related tank space optimization activities. Approval of this Change Request further resolves the parties' M-45-00C HFFACO dispute.																		
<b>Affected Documents</b> The <u>Hanford Federal Facility Agreement and Consent Order</u> , as amended, including HFFACO Action Plan Appendix D, DOE's Annual Land Disposal Restrictions Report, the Hanford site-wide hazardous waste facility permit, DOE's Tank Farm Closure/Post-Closure Workplan Update, and Hanford site internal planning, management, and budget documents (e.g., DOE and DOE contractor Baselines, Baseline Change Control documents; Sitewide Systems Engineering Control documents; Project Management Plans; and the Hanford site Integrated Priority List (IPL)).																		
<b>Approvals</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 40%; border-bottom: 1px solid black;">Ecology</td> <td style="width: 20%; border-bottom: 1px solid black;">Date</td> <td style="width: 20%; border-bottom: 1px solid black;">_____ Approved</td> <td style="width: 20%; border-bottom: 1px solid black;">_____ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;">4/16/03</td> <td style="border-bottom: 1px solid black;">✓ Approved</td> <td style="border-bottom: 1px solid black;">_____ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;">DOE - ORP</td> <td style="border-bottom: 1px solid black;">Date</td> <td style="border-bottom: 1px solid black;">_____ Approved</td> <td style="border-bottom: 1px solid black;">_____ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;">EPA</td> <td style="border-bottom: 1px solid black;">Date</td> <td style="border-bottom: 1px solid black;">_____ Approved</td> <td style="border-bottom: 1px solid black;">_____ Disapproved</td> </tr> </table>			Ecology	Date	_____ Approved	_____ Disapproved		4/16/03	✓ Approved	_____ Disapproved	DOE - ORP	Date	_____ Approved	_____ Disapproved	EPA	Date	_____ Approved	_____ Disapproved
Ecology	Date	_____ Approved	_____ Disapproved															
	4/16/03	✓ Approved	_____ Disapproved															
DOE - ORP	Date	_____ Approved	_____ Disapproved															
EPA	Date	_____ Approved	_____ Disapproved															

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**Description/Justification of Change Cont.**

The SST System Closure Plan will describe the process for closure of the entire SST system, including tanks, ancillary equipment, contaminated soil, and contaminated groundwater. The contents of the SST system Closure Plan will be determined through continuing workshop discussions between DOE and Ecology. However, it is anticipated that the SST System Closure Plan will consist of three tiers. The "top tier" will be a general description of the construct of the Closure Plan and referred to as the Framework SST Closure Plan. In this tier, the administrative framework and process including key definitions will be described that will identify how the SST system will be closed as a RCRA TSD unit. This top tier will also contain a description of the process for integrating Tank Farm Closure and Post-Closure Plans (middle tier) and individual SST component Waste Retrieval and Closure Plans (third tier) with vadose zone and groundwater corrective actions, and how the SST System Post Closure Plans will be developed and integrated into the Hanford site-wide hazardous waste facility permit.

It is anticipated that the "middle tier" will contain the Closure and Post-Closure Plan for each SST Waste Management Area (WMA). These documents are referred to as the Tank Farm Closure and Post-Closure Plans. It is expected that upon closure of all components within a WMA, final closure actions such as installation of permanent engineered caps, assessment of risk, and further closure actions that may be required to attain acceptable risk will be accomplished. Within Tank Farm Closure and Post Closure Plans, it is expected that descriptions of the WMA from a hydrologic, geologic, and engineering perspective will be included. In addition, the groundwater monitoring system for the WMA will be included. A Post Closure Plan will be defined in this middle tier.

Finally, it is anticipated that the "third tier" will only contain the Closure Plans for individual components within the SST system (tanks and their associated ancillary equipment). These include the Waste Retrieval and Closure Demonstration Plans. This section of the SST System Closure Plan will be where individual component closure activities will be added to the Permit. These individual Closure Plans will be identified as appendices or sections of the respective Tank Farm Closure Plan portion of the SST System Closure Plan. A description of retrieval actions, the extent of retrieval, and an assessment of the risk from residual waste will be included. The risk assessment will be evaluated against cumulative risk in the tank farm including the source term estimated in the soil, ancillary equipment, and residuals remaining in the tank. In addition, tank-specific closure activities will be detailed in the third tier component plans. Physical closure activities could include:

- Residual immobilization or treatment
- Tank fill
- Tank isolation
- Interim infiltration barriers

Analysis of short-term and long-term risks to tank receptors will be evaluated in the individual component closure plans. Long-term risk to future site users through the groundwater pathway is of principal concern to tank closure decisions. It is anticipated that the individual component closure plans will contain compliance schedules to complete required activities.

To-date, SST waste retrieval requirements have been predicated on the retrieval of high risk tank wastes. Concerns regarding the slow progress of this program, and concurrent delays in the acquisition of tank waste treatment capacity have resulted in the parties' establishment of a segmented series of waste retrieval negotiations (i.e., negotiations conducted under milestones M-45-00A, 00B, 00C, and 00D) designed to establish specific waste retrieval requirements in order to evaluate the effectiveness of waste retrieval technologies, and to minimize further delays in retrieval and compliance with requirements such as those of 40 CFR 265.196 and HFFACO milestone series M-45-00. The parties' waste retrieval requirements have also been established with a close eye to the need to maximize available Double Shell Tank space, while maintaining sufficient space for continued safe operations. As another decision element, the parties have, and continue to gage their actions against the need for consistency between waste retrieval and closure activities, and tank waste retrieval sequencing necessary to support the tank Waste Treatment Plant (WTP).

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**Description/Justification of Change Cont.**

The Parties will follow the Closure/Post Closure Plan Process as described in the TPA; however, the Parties may develop alternative schedules for permit processing than appears in the TPA Table 9-2. Agreements on any alternative schedules will be signed by the Parties and included in the administrative record.

**Description of DOE and Ecology's M-45-00C dispute and development of initial SST waste retrieval and closure demonstrations:**

DOE's and Ecology's M-45-00C HFFACO dispute centers on the HFFACO requirement governing the completion of the negotiation of second phase (i.e., 9/30/2006 through 9/30/2015) SST waste retrieval activities. The HFFACO due date for the completion of these negotiations stands at 2/28/2004. However, in recognition of the States' increasing concern over delays in the retrieval of SST wastes, this (M-45-00C) requirement was modified by the parties' inclusion of a footnote requiring that:

"These negotiations will also consider the need for additional compliant storage space. Should DOE fail to initiate construction of the Phase I Hanford Tank Waste Treatment Complex by December 31, 2001, as defined in Agreement interim milestone M-62-06, the due date for this M-45-00C milestone shall be automatically adjusted to 4/30/2002."

Recently, the parties' Challenges and Constraints to Hanford Cleanup Team (C3T) dialog, and the agencies' March 5, 2002 Letter of Intent to accelerate Hanford cleanup<sup>1</sup> have underscored their commitment to find ways to perform and complete Hanford cleanup significantly better, faster and cheaper. SST waste retrieval and closure schedules stand as one of the parties' principal areas of endeavor in achieving this acceleration.

Consequently, and at the direction of agency executive management, Ecology, EPA, DOE, and DOE contractor staff have participated in the agencies' C3T "Accelerated Retrieval and Closure Demonstration Subgroup". This team's charge has been to evaluate the potential for, and, if possible, to agree to the establishment of accelerated SST waste retrieval and closure demonstration project(s)<sup>2</sup>. The team has concluded that accelerated retrieval and closure demonstrations are both feasible and warranted, recognizing that such demonstrations are for the purposes of closure process documentation development, the retrieval of high risk SST wastes (accelerated risk reduction), and the generation of data / information required to satisfy applicable environmental requirements. The parties' Accelerated Retrieval and Closure Demonstration subgroup has concluded that the demonstration projects identified here are necessary to begin the arduous task of retrieving Hanford's tank wastes and closing DOE's Hanford site tank farms in accordance with federal and state requirements.

In recognition of the parties' mutual desires to: 1) amicably resolve DOE and Ecology's M-45-00C SST waste retrieval dispute, and 2) to support the parties' desire to accelerate the waste retrieval and closure process, Ecology and DOE have agreed to the establishment of the following accelerated waste retrieval and closure demonstration projects:

**I. High Risk Waste Retrieval and Closure Demonstration Projects:** These demonstration projects will focus on the retrieval of high risk SST waste, on the further development of retrieval technologies, on the development of waste retrieval and closure processes necessary for the eventual final closure of Hanford's SST farms, and on the generation of information to satisfy applicable environmental requirements. Under this M-45-02-03 modification, work at three high risk

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<sup>1</sup> Tom C. Fitzsimmons, Director, Washington State Department of Ecology; L. John Iani, Regional Administrator, U. S. Environmental Protection Agency, Region 10; Keith A. Klein, Manager, U. S. Department of Energy, Richland Operations Office; Harry L. Boston, Manager, U. S. Department of Energy, Office of River Protection; and Jessie Hill Roberson, Assistant Secretary for Environmental Management, U. S. Department of Energy.

<sup>2</sup> DOE and Ecology recognize that these initial demonstrations are for the purposes of developing closure processes and initiating SST waste retrieval and closure activities. As such, they will not, in and of themselves, constitute final closure in that they will not "... remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as dangerous waste..." as required by WAC 173-303-640(8) for closure of a tank system.

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**Description/Justification of Change Cont.**

waste tanks already scheduled for the performance of retrieval technology development (S-102, S-112, C-104) will be expanded to include the completion of retrieval and closure demonstration activities. In addition, the parties have identified three (3) additional high risk waste tanks for retrieval and closure Demonstration projects. These are tanks S-105, S-106, and S-103.

**II. Low Volume Waste Retrieval and Closure Demonstration Project:** This demonstration will focus on the retrieval of remaining wastes and the initial closure of tank C-106. Principal objectives of this demonstration are as stated for the parties' high risk waste tank demonstrations.

**Modifications to the M-45 milestone series incorporated into the HFFACO by approval of this M-45-02-03 Change Request are shown here as either shaded additions, or strikethrough deletions.**

MS Number	Milestone Description	Due Date
M-45-00	COMPLETE CLOSURE OF ALL SINGLE SHELL TANK FARMS.	9/30/2024

**LEAD  
AGENCY:  
ECOLOGY**

CLOSURE WILL FOLLOW RETRIEVAL OF AS MUCH TANK WASTE AS TECHNICALLY POSSIBLE, WITH TANK WASTE RESIDUES NOT TO EXCEED 360 CUBIC FEET (CU. FT.) IN EACH OF THE 100 SERIES TANKS, 30 CU. FT. IN EACH OF THE 200 SERIES TANKS, OR THE LIMIT OF WASTE RETRIEVAL TECHNOLOGY CAPABILITY, WHICHEVER IS LESS. IF THE DOE BELIEVES THAT WASTE RETRIEVAL TO THESE LEVELS IS NOT POSSIBLE FOR A TANK, THEN DOE WILL SUBMIT A DETAILED EXPLANATION TO EPA AND ECOLOGY EXPLAINING WHY THESE LEVELS CANNOT BE ACHIEVED, AND SPECIFYING THE QUANTITIES OF WASTE THAT THE DOE PROPOSES TO LEAVE IN THE TANK. THE REQUEST WILL BE APPROVED OR DISAPPROVED BY EPA AND ECOLOGY ON A TANK-BY-TANK BASIS. PROCEDURES FOR MODIFYING THE RETRIEVAL CRITERIA LISTED ABOVE, AND FOR PROCESSING WAIVER-REQUESTS ~~FOR EXCEPTIONS TO THE CRITERIA~~ ARE OUTLINED IN THE APPENDIX H TO THIS CHANGE REQUEST ~~THE AGREEMENT~~.

FOLLOWING COMPLETION OF RETRIEVAL, SIX OPERABLE UNITS (TANK FARMS), AS DESCRIBED IN APPENDIX C (200-BP-7, 200-PO-3, 200-RO-4, 200-TP-5, 200-TP-6, 200-UP-3), WILL BE REMEDIATED IN ACCORDANCE WITH THE APPROVED CLOSURE PLANS. FINAL CLOSURE OF THE OPERABLE UNITS (TANK FARMS) SHALL BE DEFINED AS REGULATORY APPROVAL OF COMPLETION OF CLOSURE ACTIONS AND COMMENCEMENT OF POST-CLOSURE ACTIONS.

FOR THE PURPOSES OF THIS AGREEMENT ALL UNITS LOCATED WITHIN THE BOUNDARY OF EACH TANK FARM WILL BE CLOSED IN ACCORDANCE WITH WAC 173-303-610. THIS INCLUDES CONTAMINATED SOIL AND ANCILLARY EQUIPMENT THAT WERE PREVIOUSLY DESIGNATED AS RCRA PAST PRACTICE UNITS. ADOPTING THIS APPROACH WILL ENSURE EFFICIENT USE OF FUNDING AND WILL REDUCE POTENTIAL DUPLICATION OF EFFORT VIA APPLICATION OF DIFFERENT REGULATORY REQUIREMENTS: WAC 173-303-610 FOR CLOSURE OF THE TSD UNITS AND RCRA SECTION 3004(U) FOR REMEDIATION OF RCRA PAST PRACTICE UNITS.

ALL PARTIES RECOGNIZE THAT THE RECLASSIFICATION OF PREVIOUSLY IDENTIFIED RCRA PAST PRACTICE UNITS TO ANCILLARY EQUIPMENT ASSOCIATED WITH THE TSD UNIT IS STRICTLY FOR APPLICATION OF A CONSISTENT CLOSURE APPROACH. UPGRADES TO PREVIOUSLY CLASSIFIED RCRA PAST PRACTICE UNITS TO ACHIEVE COMPLIANCE WITH RCRA OR DANGEROUS WASTE INTERIM STATUS TECHNICAL STANDARDS FOR TANK SYSTEMS (I.E., SECONDARY CONTAINMENT, INTEGRITY ASSESSMENTS, ETC.) WILL NOT BE MANDATED AS A RESULT OF THIS ACTION. HOWEVER, ANY EQUIPMENT MODIFIED OR REPLACED WILL MEET INTERIM STATUS STANDARDS. IN EVALUATING CLOSURE OPTIONS FOR SINGLE-SHELL TANKS, CONTAMINATED SOIL, AND ANCILLARY EQUIPMENT, ECOLOGY AND EPA WILL CONSIDER COST,

Description/Justification of Change Cont.

TECHNICAL PRACTICABILITY, AND POTENTIAL EXPOSURE TO RADIATION. CLOSURE OF ALL UNITS WITHIN THE BOUNDARY OF A GIVEN TANK FARM WILL BE ADDRESSED IN A CLOSURE PLAN FOR THE SINGLE-SHELL TANKS.

COMPLIANCE WITH THE WORK SCHEDULES SET FORTH IN THIS M-45 SERIES IS DEFINED AS THE PERFORMANCE OF SUFFICIENT WORK TO ASSURE WITH REASONABLE CERTAINTY THAT DOE WILL ACCOMPLISH SERIES M-45 MAJOR AND INTERIM MILESTONE REQUIREMENTS. ~~NOTE: DOE HAS APPEALED THE ISSUE NOTED WITHIN THE PRECEDING SENTENCE TO THE WASHINGTON POLLUTION CONTROL HEARINGS BOARD. THE OUTCOME OF THIS APPEAL MAY AFFECT THIS M-45-00 LANGUAGE.~~

DOE INTERNAL WORK SCHEDULES (E.G., DOE APPROVED SCHEDULE BASELINES) AND ASSOCIATED WORK DIRECTIVES AND AUTHORIZATIONS SHALL BE CONSISTENT WITH THE REQUIREMENTS OF THIS AGREEMENT. MODIFICATION OF DOE CONTRACTOR BASELINE(S) AND ISSUANCE OF ASSOCIATED DOE WORK DIRECTIVES AND/OR AUTHORIZATIONS THAT ARE NOT CONSISTENT WITH AGREEMENT REQUIREMENTS SHALL NOT BE FINALIZED PRIOR TO APPROVAL OF AN AGREEMENT CHANGE REQUEST SUBMITTED PURSUANT TO AGREEMENT ACTION PLAN SECTION 12.0. COMPLETION OF THIS MAJOR MILESTONE REQUIRES THE COMPLETION OF THE WORK SCOPE IN ALL PRECEDING MILESTONES AND TARGET DATES, UNLESS OTHERWISE AGREED TO BY THE PARTIES.

M-45-00A

COMPLETE RENEGOTIATION OF "NEAR TERM" (I.E., PRIOR TO 9/30/2006) SST WASTE RETRIEVAL ACTIVITIES.

8/31/2000  
@completed

THESE NEGOTIATIONS SHALL TAKE INTO ACCOUNT VARIABLES SUCH AS WORK IN PROGRESS, DOE'S DEVELOPING WASTE TREATMENT COMPLEX AND ENVIRONMENTAL AND HUMAN HEALTH RISKS ASSOCIATED WITH RELEASES FROM DOE'S SSTs. NEGOTIATIONS SHALL BE DESIGNED TO ESTABLISH A SUFFICIENT NUMBER OF AGREEMENT MILESTONES AND TARGET DATES TO EFFECTIVELY DRIVE EACH PHASE OF WORK INCLUDING BUT NOT LIMITED TO: 1.) WASTE RETRIEVAL TECHNOLOGY DEVELOPMENT (INCLUDING CONFINED SLUICING AND ROBOTIC TECHNOLOGIES), 2.) RETRIEVAL PERFORMANCE EVALUATIONS, 3.) LEAK DETECTION, MONITORING, AND MITIGATION, 4.) SELECTION OF SST RETRIEVAL SEQUENCE, AND 5.) DESIGN, CONSTRUCTION AND OPERATION OF SST WASTE RETRIEVAL SYSTEMS. THESE M-45-00A NEGOTIATIONS SHALL INCLUDE THE ESTABLISHMENT OF INTERIM MILESTONES FOR: A) INITIATION OF CONSTRUCTION, B) INITIATION OF RETRIEVAL, AND C) COMPLETION OF CONFINED SLUICING AT TANK C-104, AND D) INITIATION OF CONSTRUCTION OF A SALTCAKE DISSOLUTION AND RETRIEVAL SYSTEM, E) INITIATION OF RETRIEVAL, AND F) COMPLETION OF SALTCAKE WASTE RETRIEVAL AT TANK S-103. ¶

M-45-00B

COMPLETE "NEAR TERM" SST WASTE RETRIEVAL ACTIVITIES.

9/30/2006

UNTIL THE WASTE TREATMENT COMPLEX IS OPERATIONAL, THE AMOUNT OF DST SPACE AVAILABLE TO RECEIVE SST WASTE IS LIMITED. THE NEAR TERM FOCUS FOR SST WASTE RETRIEVAL WILL INCLUDE MAXIMIZING THE TRANSFER OF CONTAMINANTS OF CONCERN (LONG-LIVED, MOBILE RADIONUCLIDES) INTO THE DST SYSTEM. WORK UNDER THIS MILESTONE ALSO INCLUDES COMPLETION OF ONE "LIMITS OF TECHNOLOGY" RETRIEVAL DEMONSTRATION, INITIATION OF A SECOND "LIMITS OF TECHNOLOGY" RETRIEVAL DEMONSTRATION, AND RETRIEVAL OF SUFFICIENT SST WASTE CONTAINING NO LESS THAN 800 CURIES OF CONTAMINANTS OF CONCERN AND OCCUPYING A MINIMUM OF 2 MILLION GALLONS OF DST SPACE (PER DOE BEST-BASIS

¶ During the conduct of these negotiations, the parties agreed to two basic modifications to these requirements, i.e., 1) To base milestones established on completion (e.g., complete construction), and 2) To re-order tanks selected for early retrieval in order to maximize risk reduction and cost efficiency.

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**Description/Justification of Change Cont.**

INVENTORY DATA, 8/01/2000). "LIMITS OF TECHNOLOGY" RETRIEVAL DEMONSTRATIONS WILL SEEK TO IMPROVE UPON PAST PRACTICE SLUICING (PPS) BASELINE TECHNOLOGY INCLUDING BUT NOT LIMITED TO RETRIEVAL EFFICIENCY, LEAK LOSS DURING RETRIEVAL, AND LEAK DETECTION MITIGATION AND MONITORING (LDMM).

PROCEDURES FOR MODIFYING THE RETRIEVAL CRITERIA LISTED WITHIN THE ASSOCIATED MILESTONES, AND FOR PROCESSING WAIVER REQUESTS ~~FOR EXCEPTIONS TO THE CRITERIA~~ ARE OUTLINED IN A NEW APPENDIX "H" TO THE AGREEMENT. THE APPENDIX IS ATTACHED TO THIS CHANGE REQUEST.

M-45-02

SUBMIT ANNUAL UPDATES TO SST RETRIEVAL SEQUENCE DOCUMENT.

9/30/2000 and annually thereafter.

THIS PROVIDES FOR AN ANNUAL UPDATE OF A SST RETRIEVAL SEQUENCE DOCUMENT THAT WILL DEFINE THE TANK RETRIEVAL SEQUENCE, SELECTION CRITERIA AND, RATIONALE, REFERENCE RETRIEVAL METHOD(S) FOR EACH TANK, AND THE ESTIMATED RETRIEVAL SCHEDULES. THE RETRIEVAL SEQUENCE DOCUMENT WILL DETAIL RETRIEVAL METHODOLOGIES TO BE EMPLOYED AND ESTIMATED WASTE VOLUMES TO BE GENERATED DURING RETRIEVAL (TO BE TRANSFERRED TO THE DST'S OR OTHER AVAILABLE SAFE STORAGE). THE REPORT WILL ALSO DETAIL TANK SELECTION RATIONALE BASED ON THE PRIMARY OBJECTIVE OF MAXIMIZING RISK REDUCTION THROUGH THE RETRIEVAL OF MOBILE, LONG-LIVED RADIONUCLIDES OR POTENTIAL AIRBORNE CONTAMINANTS AND PRINCIPLE NON RADIOLOGICAL HAZARDOUS CONSTITUENTS IN A MANNER WHICH IS SENSITIVE TO WASTE TREATMENT FACILITY REQUIREMENTS AND INFRASTRUCTURE CONSTRAINTS. THE SEQUENCING WILL ALSO TAKE IN CONSIDERATION DOUBLE-SHELL TANK (DST) SPACE AND DST WASTE COMPATIBILITY WHEN SELECTING THE SST RETRIEVAL SEQUENCE. THE ANNUAL UPDATES WILL BE SUBMITTED TO ECOLOGY FOR APPROVAL AS AGREEMENT PRIMARY DOCUMENTS.

M-45-00C

COMPLETE RENEGOTIATION OF SECOND PHASE (I.E., 9/30/2006 THROUGH 9/30/2015) SST WASTE RETRIEVAL ACTIVITIES.

2/28/2004<sup>1</sup>

THESE NEGOTIATIONS SHALL TAKE INTO ACCOUNT VARIABLES SUCH AS WORK IN PROGRESS, E.G., DOE'S TANK WASTE TREATMENT COMPLEX ACQUISITION INITIATIVE AND ENVIRONMENTAL AND HUMAN HEALTH RISKS ASSOCIATED WITH RELEASES FROM DOE'S SSTs. NEGOTIATIONS SHALL BE DESIGNED TO ESTABLISH A SUFFICIENT NUMBER OF AGREEMENT MILESTONES AND TARGET DATES TO EFFECTIVELY DRIVE EACH PHASE OF WORK INCLUDING BUT NOT LIMITED TO: 1.) WASTE RETRIEVAL TECHNOLOGY DEVELOPMENT, 2.) RETRIEVAL PERFORMANCE EVALUATIONS, 3.) LEAK DETECTION, MONITORING, AND MITIGATION, 4.) SELECTION OF SST RETRIEVAL SEQUENCE, 5.) DESIGN, CONSTRUCTION AND OPERATION OF SST WASTE RETRIEVAL SYSTEMS, AND 6.) CLOSURE PLANNING AND CLOSURE PLAN DEVELOPMENT.

DOE, AND DOE'S CONTRACTOR(S) WILL RETRIEVE AND TRANSFER SST WASTES INTO THE DST SYSTEM AS SOON AS SPACE IS MADE AVAILABLE, ALLOWING DST SPACE FOR TREATMENT PLANT FEED STAGING AND SAFETY ISSUE RESOLUTION. TRANSFER OF SST WASTE WILL BE MADE ONCE SUFFICIENT DST SYSTEM SPACE IS AVAILABLE TO ALLOW A TRANSFER OF AN OPERATIONALLY PRACTICABLE VOLUME OF WASTE. SST WASTE WILL BE RETRIEVED ON A PRIORITY BASIS WITH THE GOALS OF REDUCING ENVIRONMENTAL RISK AND TREATMENT PROCESS OPTIMIZATION. DOE AND ECOLOGY WILL AGREE ON THE CRITERIA TO DETERMINE ENVIRONMENTAL RISK REDUCTION.

<sup>1</sup> These negotiations will also consider the need for additional compliant storage space. Should DOE fail to initiate construction of the Phase I Hanford Tank Waste Treatment Complex by December 31, 2001, as defined in Agreement interim milestone M-62-06, the due date for this M-45-00C milestone shall be automatically adjusted to 4/30/2002.

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**Description/Justification of Change Cont.**

M-45-03C

COMPLETE FULL SCALE SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION AT SINGLE-SHELL TANK S-112. WASTE SHALL BE RETRIEVED TO THE DST SYSTEM TO THE LIMITS OF THE TECHNOLOGY (OR TECHNOLOGIES) SELECTED. SELECTED SALTCAKE RETRIEVAL TECHNOLOGY (OR TECHNOLOGIES) MUST SEEK TO IMPROVE UPON THE PAST-PRACTICE SLUICING BASELINE IN THE AREAS OF EXPECTED RETRIEVAL EFFICIENCY, LEAK LOSS POTENTIAL, AND SUITABILITY FOR USE IN POTENTIALLY LEAKING TANKS. THIS

9/30/2005

DEMONSTRATION SHALL ALSO INCLUDE THE INSTALLATION AND IMPLEMENTATION OF FULL SCALE LEAK DETECTION, MONITORING, AND MITIGATION (LDMM) TECHNOLOGIES. THE PARTIES RECOGNIZE AND AGREE THAT THIS ACTION IS FOR DEMONSTRATION AND INITIAL WASTE RETRIEVAL PURPOSES. COMPLETION OF THIS DEMONSTRATION SHALL BE BY WRITTEN APPROVAL OF DOE AND ECOLOGY.

GOALS OF THIS DEMONSTRATION SHALL INCLUDE THE RETRIEVAL TO SAFE STORAGE OF APPROXIMATELY 550 CURIES OF MOBILE, LONG-LIVED RADIOISOTOPES AND 99% OF TANK CONTENTS BY VOLUME (PER DOE BEST-BASIS INVENTORY DATA, 8/01/2000).

M-45-03-T03

SUBMIT S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION FUNCTIONS AND REQUIREMENTS DOCUMENT.

12/30/2001

(Completed)

THIS DOCUMENT WILL ESTABLISH DEMONSTRATION SYSTEM SPECIFICATIONS (INCLUDING LDMM SYSTEM SPECIFICATIONS) AND WILL ALSO INCLUDE A SCOPING LEVEL RETRIEVAL PERFORMANCE EVALUATION (RPE). THE FUNCTIONS AND REQUIREMENTS DOCUMENT AND ITS ASSOCIATED RPE SHALL PROVIDE ENVIRONMENTAL AND HUMAN HEALTH RISK EVALUATION DATA/INFORMATION ASSOCIATED WITH ESTIMATED WASTE VOLUMES TO BE RETRIEVED, THE MAXIMUM VOLUME WHICH COULD LEAK DURING RETRIEVAL, AND RISK FROM RESIDUAL WASTE. THIS DOCUMENT WILL DETAIL KNOWN AND ESTIMATED RADIONUCLIDE CONTAMINATION AND CONTAMINANT MIGRATION WITHIN THE VADOSE ZONE AS BASES OF CALCULATION. LDMM AND RPE DOCUMENTATION PROVIDED WILL BE ADEQUATE TO ALLOW ECOLOGY TO ASSESS THE ADEQUACY OF THE DEMONSTRATION SYSTEMS. THIS DOCUMENT WILL INCORPORATE LESSONS LEARNED, INCLUDING LDMM, RETRIEVAL, INSTRUMENTATION, AND OPERATIONAL EXPERIENCE FROM PREVIOUS DOE AND INDUSTRY RELATED RETRIEVAL PROJECTS. DOE WILL SUBMIT ITS S-112 LDMM STRATEGY AS PART OF THE FUNCTIONS AND REQUIREMENTS DOCUMENT, PRIOR TO INITIATION OF DESIGN. THE S-112 FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED FOR ECOLOGY APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT.

THIS FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED IN A TIMELY FASHION SO THAT PROJECT CRITICAL PATH IS NOT AFFECTED, AND SO AS TO ALLOW ADEQUATE TIME FOR DOE AND ECOLOGY REVIEW, REVISION AND APPROVAL.

M-45-03D

COMPLETE S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)).

5/31/2003

DESIGN WILL BE CONSIDERED COMPLETE WHEN 90% OF THE DESIGN HAS BEEN APPROVED FOR FABRICATION AND/OR CONSTRUCTION.

M-45-03E

COMPLETE S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY DEMONSTRATION CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND

9/30/2004

M-45-02-03  
August 14, 2002

**Description/Justification of Change Cont.**

MITIGATION).

CONSTRUCTION WILL BE CONSIDERED COMPLETE WHEN ALL PROCESS EQUIPMENT IS INSTALLED AND ACCEPTANCE TESTS ARE COMPLETED.

M-45-03F

COMPLETE FULL SCALE SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION AT TANK C-104.

WASTE SHALL BE RETRIEVED TO THE DST SYSTEM TO THE LIMITS OF THE TECHNOLOGY (OR TECHNOLOGIES) SELECTED. SELECTED SLUDGE/HARD HEEL TECHNOLOGY (OR TECHNOLOGIES) MUST SEEK TO IMPROVE UPON THE PAST-PRACTICE SLUICING BASELINE IN THE AREAS OF EXPECTED RETRIEVAL EFFICIENCY, LEAK LOSS POTENTIAL, AND SUITABILITY FOR USE IN POTENTIALLY LEAKING TANKS. CONFINED SLUICING IS DEFINED AS THE LOCALIZED ADDITION AND RETRIEVAL OF LIQUIDS AND WASTE. THIS DEMONSTRATION SHALL ALSO INCLUDE THE INSTALLATION AND IMPLEMENTATION OF FULL SCALE LEAK DETECTION, MONITORING, AND MITIGATION (LDMM) TECHNOLOGIES. THE PARTIES RECOGNIZE AND AGREE THAT THIS ACTION IS FOR DEMONSTRATION AND INITIAL WASTE RETRIEVAL PURPOSES. COMPLETION OF THIS DEMONSTRATION SHALL BE BY APPROVAL OF DOE AND ECOLOGY.

GOALS OF THIS DEMONSTRATION SHALL INCLUDE THE RETRIEVAL TO SAFE STORAGE OF APPROXIMATELY 89 KG OF PLUTONIUM WHICH REPRESENTS APPROXIMATELY 17% OF THE TOTAL PLUTONIUM INVENTORY WITHIN THE SST SYSTEM), AND 99% OF TANK CONTENTS BY VOLUME (PER DOE'S BEST-BASIS INVENTORY DATA OF 8/01/2000).

TBE  
(This milestone date shall be established during the parties' M-45-00C negotiations)  
9/30/2007

M-45-03-T04

SUBMIT C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION FUNCTIONS AND REQUIREMENTS DOCUMENT.

THIS DOCUMENT WILL ESTABLISH DEMONSTRATION SYSTEM SPECIFICATIONS (INCLUDING LDMM SYSTEM SPECIFICATIONS) AND WILL ALSO INCLUDE A SCOPING LEVEL RETRIEVAL PERFORMANCE EVALUATION (RPE). THE FUNCTIONS AND REQUIREMENTS DOCUMENT AND ITS ASSOCIATED RPE SHALL PROVIDE ENVIRONMENTAL AND HUMAN HEALTH RISK EVALUATION DATA/INFORMATION ASSOCIATED WITH ESTIMATED WASTE VOLUMES TO BE RETRIEVED, THE MAXIMUM VOLUME WHICH COULD LEAK DURING RETRIEVAL, AND RISK FROM RESIDUAL WASTE. THIS DOCUMENT WILL DETAIL KNOWN AND ESTIMATED RADIONUCLIDE CONTAMINATION AND CONTAMINANT MIGRATION WITHIN THE VADOSE ZONE AS BASES OF CALCULATION. LDMM AND RPE DOCUMENTATION PROVIDED WILL BE ADEQUATE TO ALLOW ECOLOGY TO ASSESS THE ADEQUACY OF THE DEMONSTRATION SYSTEMS. THIS DOCUMENT WILL INCORPORATE LESSONS LEARNED, INCLUDING LDMM, RETRIEVAL, INSTRUMENTATION, AND OPERATIONAL EXPERIENCE FROM PREVIOUS DOE AND INDUSTRY RELATED RETRIEVAL PROJECTS. DOE WILL SUBMIT ITS C-104 LDMM STRATEGY AS PART OF THE FUNCTIONS AND REQUIREMENTS DOCUMENT, PRIOR TO INITIATION OF DESIGN. THIS DOCUMENT WILL BE SUBMITTED FOR ECOLOGY APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT.

THIS FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED IN A TIMELY FASHION SO THAT PROJECT CRITICAL PATH IS NOT AFFECTED, AND SO AS TO ALLOW ADEQUATE TIME FOR DOE AND ECOLOGY REVIEW, REVISION AND APPROVAL.

12/31/2001  
**(Completed)**

M-45-03G

COMPLETE C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL COLD DEMONSTRATION.

THIS FULL SCALE DEMONSTRATION WILL BE SUFFICIENT TO SUPPORT FINAL

6/30/2004

M-45-02-03  
August 14, 2002

**Description/Justification of Change Cont.**

DESIGN AND TESTING OF ALL EQUIPMENT, INCLUDING THE LDMM APPROACH USED IN THE ACTUAL SYSTEM. THE DEMONSTRATION MUST ESTABLISH THE PERFORMANCE OF THE EQUIPMENT SPECIFIED IN THE FUNCTIONS AND REQUIREMENTS DOCUMENT. A LETTER REPORT WILL BE SUBMITTED TO ECOLOGY TO DOCUMENT THE RESULTS OF THE COLD DEMONSTRATION.

M-45-03H COMPLETE C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)). 9/30/2004

DESIGN WILL BE CONSIDERED COMPLETE WHEN 90% OF THE DESIGN HAS BEEN APPROVED FOR FABRICATION AND/OR CONSTRUCTION.

M-45-03I COMPLETE C-104 SLUDGE/HARD HEEL, CONFINED SLUICING AND ROBOTIC TECHNOLOGIES, WASTE RETRIEVAL DEMONSTRATION CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION). 9/30/2006

CONSTRUCTION WILL BE CONSIDERED COMPLETE WHEN ALL PROCESS EQUIPMENT IS INSTALLED AND ACCEPTANCE TESTS ARE COMPLETED.

M-45-05 RETRIEVE WASTE FROM ALL REMAINING SINGLE-SHELL TANKS. 9/30/2018

COMPLETE WASTE RETRIEVAL FROM ALL REMAINING SINGLE-SHELL TANKS. RETRIEVAL STANDARDS AND COMPLETION DEFINITIONS ARE PROVIDED UNDER THE MAJOR MILESTONE. THE SCHEDULE REFLECTS RETRIEVAL ACTIVITIES ON A FARM-BY-FARM BASIS. IT ALSO ALLOWS FLEXIBILITY TO RETRIEVE TANKS FROM VARIOUS FARMS IF DESIRED TO SUPPORT SAFETY ISSUE RESOLUTION, PRETREATMENT OR DISPOSAL FEED REQUIREMENTS, OR OTHER PRIORITIES.

M-45-05A COMPLETE INITIAL WASTE RETRIEVAL FROM TANK S-102. 9/30/2006

THE S-102 INITIAL WASTE RETRIEVAL TECHNOLOGY (OR TECHNOLOGIES) WILL BE SELECTED BASED ON THE PRINCIPLE CRITERIA OF MAXIMIZING THE RETRIEVAL OF MOBILE, LONG-LIVED RADIOISOTOPES AND NON-RADIOLOGICAL HAZARDOUS CONSTITUENTS. THE PARTIES RECOGNIZE AND AGREE THAT THIS ACTION IS FOR INITIAL WASTE RETRIEVAL PURPOSES. COMPLETION OF THIS INITIAL RETRIEVAL SHALL BE BY APPROVAL OF DOE AND ECOLOGY.

GOALS OF THIS INITIAL WASTE RETRIEVAL PROJECT SHALL INCLUDE THE RETRIEVAL TO SAFE STORAGE OF APPROXIMATELY 490 CURIES OF MOBILE, LONG-LIVED RADIOISOTOPES AND 99% OF TANK CONTENTS BY VOLUME (PER DOE BEST-BASIS INVENTORY DATA, 8/01/2000).

COMPLETION OF S-102 INITIAL WASTE RETRIEVAL IS SUBJECT TO SAFE STORAGE SPACE AVAILABILITY CONSISTENT WITH M-45-00B.

M-45-05-T16 SUBMIT S-102 INITIAL WASTE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT. 10/30/2002

THIS DOCUMENT WILL ESTABLISH DEMONSTRATION SYSTEM SPECIFICATIONS (INCLUDING LDMM SYSTEM SPECIFICATIONS) AND WILL ALSO INCLUDE A SCOPING LEVEL RETRIEVAL PERFORMANCE EVALUATION (RPE). THE FUNCTIONS AND REQUIREMENTS DOCUMENT AND ITS ASSOCIATED RPE SHALL ALSO PROVIDE ENVIRONMENTAL AND HUMAN HEALTH RISK EVALUATION DATA/INFORMATION ASSOCIATED WITH ESTIMATED WASTE VOLUMES TO BE RETRIEVED, THE MAXIMUM VOLUME WHICH COULD LEAK DURING RETRIEVAL, AND RISK FROM RESIDUAL WASTE. THIS DOCUMENT WILL DETAIL KNOWN AND ESTIMATED RADIONUCLIDE CONTAMINATION AND CONTAMINANT MIGRATION WITHIN THE VADOSE ZONE AS BASES OF CALCULATION. LDMM AND RPE

M-45-02-03  
August 14, 2002

**Description/Justification of Change Cont.**

DOCUMENTATION PROVIDED WILL BE ADEQUATE TO ALLOW ECOLOGY TO ASSESS THE ADEQUACY OF THE DEMONSTRATION SYSTEMS. THIS DOCUMENT WILL INCORPORATE LESSONS LEARNED, INCLUDING LDMM, RETRIEVAL, INSTRUMENTATION, AND OPERATIONAL EXPERIENCE FROM PREVIOUS DOE AND INDUSTRY RELATED RETRIEVAL PROJECTS. DOE WILL SUBMIT ITS S-102 LDMM STRATEGY AS PART OF THE FUNCTIONS AND REQUIREMENTS DOCUMENT, PRIOR TO INITIATION OF DESIGN. THIS DOCUMENT WILL BE SUBMITTED FOR ECOLOGY APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT.

THIS FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED IN A TIMELY FASHION SO THAT PROJECT CRITICAL PATH IS NOT AFFECTED, AND SO AS TO ALLOW ADEQUATE TIME FOR DOE AND ECOLOGY REVIEW, REVISION AND APPROVAL.

M-45-05B COMPLETE S-102 INITIAL RETRIEVAL PROJECT DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)) 3/31/2004

THE DESIGN WILL BE CONSIDERED COMPLETE WHEN 90% OF THE DESIGN HAS BEEN APPROVED FOR FABRICATION AND/OR CONSTRUCTION.

M-45-05C COMPLETE S-102 INITIAL WASTE RETRIEVAL PROJECT CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION). 11/30/2005

CONSTRUCTION WILL BE CONSIDERED COMPLETE WHEN ALL PROCESS EQUIPMENT IS INSTALLED AND ACCEPTANCE TESTS ARE COMPLETED.

M-45-05D ESTABLISH COMPLETION DATE FOR THE SECOND TANK, INITIAL WASTE RETRIEVAL. 12/31/2002 (Completed)

THIS SECOND FULL SCALE INITIAL WASTE RETRIEVAL PROJECT WILL BE CONDUCTED UNDER THE ONGOING CRITERIA OF MAXIMIZING THE RETRIEVAL TO SAFE STORAGE OF MOBILE, LONG LIVED RADIOISOTOPES AND PRINCIPLE NON-RADIOLOGICAL HAZARDOUS CONSTITUENTS. COMPLETION OF THIS INITIAL RETRIEVAL MILESTONE SHALL BE BY APPROVAL OF DOE AND ECOLOGY.

M-045-11 COMPLETE 244-AR VAULT INTERIM STABILIZATION. 9/30/2003

**HIGH RISK WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECTS**

**M-45-13 INTERIM COMPLETION OF TANK S-112 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT 6/30/2006**

**THE S-112 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT WILL BE CONSIDERED INTERIM COMPLETE WHEN THE FOLLOWING CRITERIA HAVE BEEN MET:**

- 1. FULL SCALE WASTE RETRIEVAL HAS BEEN COMPLETED IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS INCLUDING WASHINGTON'S HAZARDOUS WASTE MANAGEMENT ACT REQUIREMENTS SET BY THIS AGREEMENT AND THE APPROVED S-112 SALTCAKE WASTE RETRIEVAL TECHNOLOGY FUNCTIONS AND REQUIREMENTS DOCUMENT (DOE WILL DOCUMENT PROJECT DATA AND RESULTS IN A WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT REPORT)**
- 2. REMAINING WASTES HAVE BEEN ADEQUATELY CHARACTERIZED AND A RISK ASSESSMENT, APPROVED BY ECOLOGY, HAS BEEN COMPLETED**

Description/Justification of Change Cont.

- FOR RESIDUALS THAT REMAIN IN THE TANK
3. THE S-112 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN HAS BEEN SUBMITTED BY DOE AND APPROVED BY ECOLOGY, I.E. INCORPORATED INTO THE SITE-WIDE PERMIT.
  4. IF APPROPRIATE, DOE HAS REQUESTED, AND ECOLOGY HAS APPROVED AN EXCEPTION TO WASTE RETRIEVAL CRITERIA PURSUANT TO AGREEMENT APPENDIX H.

M-45-13-T01

FINAL COMPLETION OF TANK S-112 SST RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT

6/30/2007

COMPLETION OF THE TANK S-112 RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT IS DEFINED AS THE COMPLETION OF NECESSARY FIELD PROJECT ACTIONS REQUIRED BY THE APPROVED S-112 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN.

M-45-14

INTERIM COMPLETION OF TANK C-104 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT

6/30/2008

THE C-104 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT WILL BE CONSIDERED INTERIM COMPLETE WHEN THE FOLLOWING CRITERIA HAVE BEEN MET:

1. FULL SCALE WASTE RETRIEVAL HAS BEEN COMPLETED IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS INCLUDING WASHINGTON'S HAZARDOUS WASTE MANAGEMENT ACT, REQUIREMENTS SET BY THIS AGREEMENT, AND THE APPROVED C-104 SLUDGE/HARD HEEL, CONTAINED SLUICING AND ROBOTIC TECHNOLOGIES WASTE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT (DOE WILL DOCUMENT PROJECT DATA AND RESULTS IN A WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT REPORT).
2. REMAINING WASTES HAVE BEEN ADEQUATELY CHARACTERIZED, AND A RISK ASSESSMENT, APPROVED BY ECOLOGY, HAS BEEN COMPLETED FOR RESIDUALS THAT REMAIN IN THE TANK.
3. THE C-104 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN HAS BEEN SUBMITTED BY DOE AND APPROVED BY ECOLOGY, I.E. INCORPORATED INTO THE SITE-WIDE PERMIT.
4. IF APPROPRIATE, DOE HAS REQUESTED, AND ECOLOGY HAS APPROVED AN EXCEPTION TO WASTE RETRIEVAL CRITERIA PURSUANT TO AGREEMENT APPENDIX H.

M-45-14-T01

FINAL COMPLETION OF TANK C-104 SST RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT

6/3/2009

COMPLETION OF THE TANK C-104 RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT IS DEFINED AS THE COMPLETION OF NECESSARY FIELD PROJECT ACTIONS REQUIRED BY THE APPROVED C-104 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN.

M-45-15

INTERIM COMPLETION OF TANK S-102 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT

6/30/2007

THE S-102 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT WILL BE CONSIDERED INTERIM COMPLETE WHEN THE FOLLOWING CRITERIA HAVE BEEN MET:

1. FULL SCALE WASTE RETRIEVAL HAS BEEN COMPLETED IN

Description/Justification of Change Cont.

ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS INCLUDING WASHINGTON'S HAZARDOUS WASTE MANAGEMENT ACT REQUIREMENTS SET BY THIS AGREEMENT, AND THE APPROVED S-102 INITIAL WASTE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT (DOE WILL DOCUMENT PROJECT DATA AND RESULTS IN A WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT REPORT).

2. REMAINING WASTES HAVE BEEN ADEQUATELY CHARACTERIZED, AND A RISK ASSESSMENT, APPROVED BY ECOLOGY, HAS BEEN COMPLETED FOR RESIDUALS THAT REMAIN IN THE TANK.
3. THE S-102 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN HAS BEEN SUBMITTED BY DOE AND APPROVED BY ECOLOGY, I.E. INCORPORATED INTO THE SITE-WIDE PERMIT.
4. IF APPROPRIATE, DOE HAS REQUESTED, AND ECOLOGY HAS APPROVED AN EXCEPTION TO WASTE RETRIEVAL CRITERIA PURSUANT TO AGREEMENT APPENDIX H.

M-45-15-T01

FINAL COMPLETION OF TANK S-102 SST RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT

6/30/2008

COMPLETION OF THE TANK S-102 RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT IS DEFINED AS THE COMPLETION OF NECESSARY FIELD PROJECT ACTIONS REQUIRED BY THE APPROVED S-102 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN.

M-45-16

INTERIM COMPLETION OF TANK S-105, S-106, AND S-103 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT

7/31/2010

THE S-105, S-106, AND S-103 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT WILL BE CONSIDERED INTERIM COMPLETE WHEN THE FOLLOWING CRITERIA HAVE BEEN MET AND DOCUMENTED FOR EACH OF THE TANKS:

1. FULL SCALE WASTE RETRIEVAL HAS BEEN COMPLETED IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS INCLUDING WASHINGTON'S HAZARDOUS WASTE MANAGEMENT ACT REQUIREMENTS SET BY THIS AGREEMENT, AND THE APPROVED S-105, S-106, AND S-103 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION FUNCTIONS AND REQUIREMENTS DOCUMENT (DOE WILL DOCUMENT PROJECT DATA AND RESULTS IN A WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT REPORT).
2. REMAINING WASTES HAVE BEEN ADEQUATELY CHARACTERIZED, AND A RISK ASSESSMENT, APPROVED BY ECOLOGY, HAS BEEN COMPLETED FOR RESIDUALS THAT REMAIN IN THE TANK.
3. THE S-105, S-106, AND S-103 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN HAS BEEN SUBMITTED BY DOE AND APPROVED BY ECOLOGY, I.E. INCORPORATED INTO THE SITE-WIDE PERMIT.
4. IF APPROPRIATE, DOE HAS REQUESTED, AND ECOLOGY HAS APPROVED, AN EXCEPTION TO WASTE RETRIEVAL CRITERIA PURSUANT TO AGREEMENT APPENDIX H. A REQUEST MAY BE MADE FOR EACH AND/OR ALL TANKS.

M-45-16-T01

FINAL COMPLETION OF TANK S-105, S-106, AND S-103 SST RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT

7/31/2010

COMPLETION OF THE TANK S-105, S-106, AND S-103 RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT IS DEFINED AS THE COMPLETION OF NECESSARY FIELD PROJECT ACTIONS REQUIRED BY THE APPROVED S-105, S-106, AND S-103 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN.

M-45-02-03

August 14, 2002

Description/Justification of Change Cont.

M-45-05-T17 SUBMIT SECOND TANK INITIAL ~~S-105, S-106, AND S-103~~ WASTE RETRIEVAL AND CLOSURE DEMONSTRATION FUNCTIONS AND REQUIREMENTS DOCUMENT. 4/30/2004  
4/30/2005

THIS DOCUMENT WILL ESTABLISH DEMONSTRATION SYSTEM SPECIFICATIONS (INCLUDING LDMM SYSTEM SPECIFICATIONS) AND WILL ALSO INCLUDE A SCOPING LEVEL RETRIEVAL PERFORMANCE EVALUATION (RPE) FOR EACH TANK. THE FUNCTIONS AND REQUIREMENTS DOCUMENT AND ITS ASSOCIATED RPE SHALL ALSO PROVIDE AS A SEPARATE EVALUATION FOR EACH OF THE THREE TANKS ENVIRONMENTAL AND HUMAN HEALTH RISK EVALUATION DATA/INFORMATION ASSOCIATED WITH ESTIMATED WASTE VOLUMES TO BE RETRIEVED, THE MAXIMUM VOLUME WHICH COULD LEAK DURING RETRIEVAL, AND RISK FROM RESIDUAL WASTE. THIS DOCUMENT WILL DETAIL KNOWN AND ESTIMATED RADIONUCLIDE CONTAMINATION AND CONTAMINANT MIGRATION WITHIN THE VADOSE ZONE AS BASES OF CALCULATION. LDMM AND RPE DOCUMENTATION PROVIDED WILL BE ADEQUATE TO ALLOW ECOLOGY TO ASSESS THE ADEQUACY OF THE DEMONSTRATION SYSTEMS. THIS DOCUMENT WILL INCORPORATE LESSONS LEARNED, INCLUDING LDMM, RETRIEVAL, INSTRUMENTATION, AND OPERATIONAL EXPERIENCE FROM PREVIOUS DOE AND INDUSTRY RELATED RETRIEVAL PROJECTS. THE RETRIEVAL FUNCTIONS AND REQUIREMENTS DOCUMENT WILL DOCUMENT ALL PERTINENT RETRIEVAL AND CLOSURE REQUIREMENTS, E.G., THOSE SPECIFIC TO THE EXTENT OF RETRIEVAL NECESSARY TO ALLOW CLOSURE. DOE WILL SUBMIT ITS LDMM STRATEGY AS PART OF THE FUNCTIONS AND REQUIREMENTS DOCUMENT, PRIOR TO INITIATION OF DESIGN. THIS DOCUMENT WILL BE SUBMITTED FOR ECOLOGY APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT.

THIS FUNCTIONS AND REQUIREMENTS DOCUMENT WILL BE SUBMITTED IN A TIMELY FASHION SO THAT PROJECT CRITICAL PATH IS NOT AFFECTED, AND SO AS TO ALLOW ADEQUATE TIME FOR DOE AND ECOLOGY REVIEW, REVISION AND APPROVAL.

M-45-05E COMPLETE SECOND TANK INITIAL ~~S-105, S-106, AND S-103~~ WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM) FOR EACH TANK). 6/30/2006  
6/30/2007

THE DESIGN WILL BE CONSIDERED COMPLETE WHEN 90% OF THE DESIGN HAS BEEN APPROVED FOR FABRICATION AND/OR CONSTRUCTION.

M-45-05F COMPLETE SECOND INITIAL ~~S-105, S-106, AND S-103~~ WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION). TBE  
(Specific tank identification and this milestone date shall be established no later than 12/31/02)  
9/30/2008

CONSTRUCTION WILL BE CONSIDERED COMPLETE WHEN ALL PROCESS EQUIPMENT IS INSTALLED AND ACCEPTANCE TESTS ARE COMPLETED.

M-45-05G-T01 COMPLETE ~~S-105, S-106, AND S-103~~ WASTE RETRIEVAL 10/31/2009

WASTE SHALL BE RETRIEVED TO THE DST SYSTEM TO THE LIMITS OF THE TECHNOLOGY (OR TECHNOLOGIES) SELECTED. RETRIEVAL SHALL RETRIEVE AS MUCH WASTE AS TECHNICALLY POSSIBLE, WITH A REMAINING RESIDUAL OF NO MORE THAN 360 CUBIC FEET (CU. FT.)

**LOW VOLUME WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT**

M-45-05H INTERIM COMPLETION OF TANK C-106 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT 4/30/2004

Description/Justification of Change Cont.

THE C-106 SST WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT WILL BE CONSIDERED INTERIM COMPLETE WHEN THE FOLLOWING CRITERIA HAVE BEEN MET:

1. FULL SCALE WASTE RETRIEVAL HAS BEEN COMPLETED IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS INCLUDING WASHINGTON'S HAZARDOUS WASTE MANAGEMENT ACT AND REQUIREMENTS SET BY THIS AGREEMENT (DOE WILL DOCUMENT PROJECT DATA AND RESULTS IN A WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT REPORT).
2. REMAINING WASTES HAVE BEEN ADEQUATELY CHARACTERIZED, AND A RISK ASSESSMENT, APPROVED BY ECOLOGY, HAS BEEN COMPLETED FOR RESIDUALS THAT REMAIN IN THE TANK.
3. THE C-106 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN HAS BEEN SUBMITTED BY DOE AND APPROVED BY ECOLOGY, I.E. INCORPORATED INTO THE SITE-WIDE PERMIT.
4. IF APPROPRIATE, DOE HAS REQUESTED, AND ECOLOGY HAS APPROVED, AN EXCEPTION TO WASTE RETRIEVAL CRITERIA PURSUANT TO AGREEMENT APPENDIX H.

M-45-05N-T01

FINAL COMPLETION OF TANK C-106 SST RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT.

12/31/2004

COMPLETION OF THE TANK C-106 RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT IS DEFINED AS THE COMPLETION OF NECESSARY FIELD PROJECT ACTIONS REQUIRED BY THE APPROVED C-106 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN.

M-45-05I-T01

CONDUCT C-106 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT 30% DESIGN CONSULTATION.

1/31/2003

THIS EFFORT INCLUDES THE REQUIREMENT TO DELIVER A PROJECT STATUS BRIEFING AT THE 30% DESIGN REVIEW STAGE TO ALLOW ECOLOGY CONSIDERATION. THE BRIEFING SHALL PROVIDE A PROJECT STATUS REPORT AND ENVIRONMENTAL AND HUMAN HEALTH RISK EVALUATION DATA/INFORMATION ASSOCIATED WITH ESTIMATED WASTE VOLUMES TO BE RETRIEVED, AND WITH THE ESTIMATED WASTE VOLUME OF RESIDUAL WASTE. TARGET LEAK DETECTION THRESHOLDS WILL ALSO BE PRESENTED. THE INFORMATION PROVIDED WILL PROVIDE ESTIMATED RADIONUCLIDE CONTAMINATION AND CONTAMINANT MIGRATION WITHIN THE VADOSE ZONE AS BASIS OF THE CALCULATION.

M-45-05J-T01

COMPLETE C-106 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT DESIGN (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING DESIGN AND OPERATING STRATEGIES NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION (LDMM)).

4/30/2003

THE DESIGN WILL BE CONSIDERED COMPLETE WHEN 90% OF THE DESIGN HAS BEEN APPROVED FOR FABRICATION AND/OR CONSTRUCTION.

M-45-05K-T01

COMPLETE C-106 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PROJECT CONSTRUCTION (TO INCLUDE ALL PHYSICAL SYSTEMS INCLUDING THOSE NECESSARY FOR LEAK DETECTION MONITORING AND MITIGATION).

9/30/2003

CONSTRUCTION WILL BE CONSIDERED COMPLETE WHEN ALL EQUIPMENT IS INSTALLED AND ACCEPTANCE TESTS ARE COMPLETED.

M-45-05L-T01

COMPLETE FULL SCALE C-106 WASTE RETRIEVAL

1/1/2008

M-45-02-03  
August 14, 2002

**Description/Justification of Change Cont.**

WASTE SHALL BE RETRIEVED TO THE DST SYSTEM TO THE LIMITS OF THE TECHNOLOGY (OR TECHNOLOGIES) SELECTED. RETRIEVAL SHALL RETRIEVE AS MUCH WASTE AS TECHNICALLY POSSIBLE, WITH A REMAINING RESIDUAL OF NO MORE THAN 360 CUBIC FEET (CU. FT.)

M-45-05M-T01	SUBMIT C-106 WASTE RETRIEVAL RESULTS, ANALYSIS OF RESIDUAL WASTE(S) AND (IF APPROPRIATE) REQUEST FOR EXCEPTION TO THE CRITERIA PURSUANT TO AGREEMENT APPENDIX H	2/27/2004
M-45-05-T05	INITIATE TANK RETRIEVAL FROM FIVE ADDITIONAL SINGLE-SHELL TANKS.	9/30/2007
M-45-05-T06	INITIATE TANK RETRIEVAL FROM FIVE ADDITIONAL SINGLE-SHELL TANKS.	9/30/2008
M-45-05-T07	INITIATE TANK RETRIEVAL FROM SEVEN ADDITIONAL SINGLE-SHELL TANKS.	9/30/2009
M-45-05-T08	INITIATE TANK RETRIEVAL FROM EIGHT ADDITIONAL SINGLE-SHELL TANKS.	9/30/2010
M-45-00D	COMPLETE RENEGOTIATION OF THE REMAINDER OF THE SST WASTE RETRIEVAL AND CLOSURE PROGRAM.	6/30/2011
<p>THESE NEGOTIATIONS WILL ESTABLISH REGULATORY REQUIREMENTS FOR THE REMAINDER OF THE SST WASTE RETRIEVAL AND CLOSURE PROGRAM (THROUGH COMPLETION OF CLOSURE AT ALL SINGLE SHELL TANK FARMS). NEGOTIATIONS WILL INCLUDE MODIFICATION AS MAY BE NECESSARY OF COMPLETION DATES FOR SST WASTE RETRIEVAL AND SST FARM CLOSURE BASED ON EXPERIENCE GAINED FROM SST AND DST WASTE RETRIEVAL WORK COMPLETED, CORRECTIVE ACTIONS, PHASE I TREATMENT COMPLEX OPERATIONS, PHASE II TREATMENT PLANNING, KNOWN AND LIKELY VADOSE ZONE AND GROUNDWATER IMPACTS, AND OTHER AVAILABLE ENVIRONMENTAL IMPACT INFORMATION.</p> <p>DOE, AND DOE'S CONTRACTOR(S) WILL RETRIEVE AND TRANSFER SST WASTES INTO THE DST SYSTEM AS SOON AS SPACE IS MADE AVAILABLE, ALLOWING DST SPACE FOR TREATMENT PLANT FEED STAGING AND SAFETY ISSUE RESOLUTION. TRANSFER OF SST WASTE WILL BE MADE ONCE SUFFICIENT DST SYSTEM SPACE IS AVAILABLE TO ALLOW A TRANSFER OF AN OPERATIONALLY PRACTICABLE VOLUME OF WASTE. SST WASTE WILL BE RETRIEVED ON A PRIORITY BASIS WITH THE GOALS OF REDUCING ENVIRONMENTAL RISK AND TREATMENT PROCESS OPTIMIZATION. DOE AND ECOLOGY WILL AGREE ON THE CRITERIA TO DETERMINE ENVIRONMENTAL RISK REDUCTION.</p>		
M-45-05-T09	INITIATE TANK RETRIEVAL FROM TEN ADDITIONAL SINGLE-SHELL TANKS.	9/30/2011
M-45-05-T10	INITIATE TANK RETRIEVAL FROM 12 ADDITIONAL SINGLE-SHELL TANKS.	9/30/2012
M-45-05-T11	INITIATE TANK RETRIEVAL FROM 14 ADDITIONAL SINGLE-SHELL TANKS.	9/30/2013
M-45-05-T12	INITIATE TANK RETRIEVAL FROM 17 ADDITIONAL SINGLE-SHELL TANKS.	9/30/2014
M-45-05-T13	INITIATE TANK RETRIEVAL FROM 20 ADDITIONAL SINGLE-SHELL TANKS.	9/30/2015
M-45-05-T14	INITIATE TANK RETRIEVAL FROM 20 ADDITIONAL SINGLE-SHELL TANKS.	9/30/2016
M-45-05-T15	INITIATE TANK RETRIEVAL FROM 20 ADDITIONAL SINGLE-SHELL TANKS.	9/30/2017
M-45-06	COMPLETE CLOSURE OF ALL SINGLE-SHELL TANK FARMS IN ACCORDANCE WITH APPROVED CLOSURE/POST CLOSURE PLAN(S).	9/30/2024
M-45-06-T05	SUBMIT TANK FARM CLOSURE/POST-CLOSURE WORKPLAN UPDATE. BECAUSE OF THE UNCERTAINTIES IN THE CLOSURE PROCESS, THE WORK PLAN	6/30/2002 (COMPLETED)

Description/Justification of Change Cont.

WILL EVOLVE AS THESE UNCERTAINTIES ARE RESOLVED AND EVENTUALLY IT WILL BECOME THE SST CLOSURE/POST CLOSURE PLAN(S) ISSUED FOR ECOLOGY'S APPROVAL UNDER SUBSEQUENT TPA INTERIM MILESTONES. MAJOR WORK AREAS COVERED IN THE WORK PLAN WILL INCLUDE WASTE RETRIEVAL, OPERABLE UNITS CHARACTERIZATION, TECHNOLOGIES DEVELOPMENT TO SUPPORT CLOSURE, REGULATORY PATHWAY AND STRATEGY FOR ACHIEVING CLOSURE.

THIS UPDATE OF THE MAY 1996 CLOSURE WORKPLAN WILL INCLUDE, BUT IS NOT LIMITED TO THE INCORPORATION OF:

- A DETAILED DESCRIPTION AND DEPICTION OF ALL COMPONENTS OF DOE'S SINGLE-SHELL TANK SYSTEM IDENTIFYING SUCH COMPONENTS BY NAME, EQUIPMENT NUMBER AND LOCATION, AND BY DESCRIBING COMPONENT STATUS AND CONTENTS (ANY COMPONENTS PREVIOUSLY INCLUDED WITHIN THE SST SYSTEM WHICH DOE PROPOSES FOR DISPOSITION OUTSIDE OF THE SST CLOSURE PLAN SHALL BE IDENTIFIED). DOE'S DESCRIPTION AND DEPICTION OF THE SST SYSTEM SHALL INCLUDE A TABULAR PRESENTATION INCLUDING, BUT NOT LIMITED TO ALL UNDERGROUND STORAGE TANKS, ABOVE GROUND STORAGE TANKS, TRANSFER PIPELINES, VALVE AND PUMP PITS, SECONDARY STRUCTURES AND TANKS WITHIN VAULTS, RECEIVER TANKS, AND ANY OTHER COMPONENT OF THE SST SYSTEM THAT HAS BEEN, IS, OR MAY BE USED FOR TRANSFERRING, STORING, OR TREATING WASTES WITHIN THE RCRA BOUNDARY OF THE SST SYSTEM,
- DATA ACQUIRED DURING THE C-106 RETRIEVAL PROJECT (COMPLETED DURING FY2000),
- RESULTS FROM RECENT ACTIVITIES FOCUSING ON MAXIMIZING RISK REDUCTION,
- INFORMATION OBTAINED VIA VADOSE ZONE, GROUNDWATER MONITORING, AND RFI/CMS PROCESSES, AND
- LESSONS LEARNED FROM THE AX FARM RPE.

DOE'S TANK FARM CLOSURE/POST-CLOSURE WORKPLAN UPDATE WILL BE SUBMITTED TO ECOLOGY AS A PRIMARY DOCUMENT.

M-045-06-T06

SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.

6/30/2004

~~THIS UPDATE OF THE 6/30/02 CLOSURE WORKPLAN WILL INCLUDE, BUT IS NOT LIMITED TO THE INCORPORATION OF:—~~

- ~~— NEWLY AVAILABLE DATA;~~
- ~~— A MORE DETAILED ASSESSMENT OF THE POINT OF COMPLIANCE AND RISK INFORMATION;~~
- ~~— UPDATED DATA FROM VADOSE ZONE AND GROUNDWATER CHARACTERIZATION AND MONITORING;~~
- ~~— NEW INFORMATION FROM M-45-SERIES RETRIEVAL ACTIONS COMPLETED TO DATE.~~

~~THE CLOSURE/POST CLOSURE WORKPLAN WILL BE SUBMITTED TO ECOLOGY AS A PRIMARY DOCUMENT.~~

M-045-06-T07

SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.

6/30/2006

(And every two years thereafter)

~~THIS UPDATE OF THE 6/30/04 CLOSURE WORKPLAN WILL INCLUDE, BUT IS NOT LIMITED TO THE INCORPORATION OF:~~

- ~~— DATA OBTAINED FROM THE "LIMITS OF TECHNOLOGY" SALTCAKE TANK RETRIEVAL TECHNOLOGY DEMONSTRATION;~~
- ~~— RESULTS FROM OTHER SST RETRIEVAL ACTIVITIES;~~
- ~~— UPDATED DATA FROM VADOSE ZONE AND GROUNDWATER~~

Description/Justification of Change Cont.

~~CHARACTERIZATION AND MONITORING,  
RIVER PROTECTION PROJECT AGREEMENT REQUIREMENTS, INCLUDING  
WASTE TREATMENT COMPLEX PROCESSING CAPABILITY,~~

~~CLOSURE/POSTCLOSURE WORKPLANS WILL BE SUBMITTED TO ECOLOGY AS  
PRIMARY DOCUMENTS.~~

M-45-06-T20

SUBMIT SST SYSTEM IMPLEMENTATION PLAN IN SUPPORT OF RETRIEVAL AND CLOSURE ACTIVITIES.

6/30/2004 (AND EVERY 2 YEARS THEREAFTER)

MAJOR WORK AREAS COVERED IN THE IMPLEMENTATION PLAN WILL INCLUDE WASTE RETRIEVAL OPERABLE UNITS CHARACTERIZATION, TECHNOLOGIES DEVELOPMENT TO SUPPORT CLOSURE, RISK ASSESSMENTS, AND GROUNDWATER MONITORING STRATEGIES. (REFINEMENT OF THE MAJOR WORK AREAS WILL BE DEVELOPED IN A JOINT ECOLOGY/DOE WORKSHOP.)

DOE'S SST SYSTEM IMPLEMENTATION PLAN UPDATE WILL BE SUBMITTED TO ECOLOGY AS A PRIMARY DOCUMENT.

M-45-06A

SUBMIT A CERTIFIED (FRAMEWORK) SST SYSTEM CLOSURE PLAN AND C-106 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN, AS AN APPLICATION FOR A MODIFICATION TO THE HANFORD SITE-WIDE HAZARDOUS WASTE FACILITY PERMIT TO ECOLOGY. THIS SUBMITTAL WILL INCLUDE ALL REQUIRED CLOSURE PLAN ELEMENTS. ADDITIONALLY, THIS SUBMITTAL WILL INCLUDE THE FOLLOWING:

12/19/2002

1. CHARACTERIZATION APPROACH FOR RESIDUAL WASTES. THIS APPROACH WILL SUPPORT DECISIONS REGARDING THE COMPLIANCE OF THE RESIDUAL WASTE WITH APPLICABLE REGULATORY REQUIREMENTS (INCLUDING BUT NOT LIMITED TO: CHARACTERIZATION NEEDS, WORK REQUIREMENTS, WORK SCHEDULES, AND CONTAMINANTS OF CONCERN FOR; RISK ASSESSMENT, LAND DISPOSAL RESTRICTION (LDR), AND THE WASHINGTON STATE HAZARDOUS WASTE MANAGEMENT ACT).
2. A RISK ASSESSMENT METHODOLOGY INCLUSIVE OF THE ASSUMPTIONS, APPROACH, CONCEPTUAL MODEL, AND METRICS (E.G., POINT OF COMPLIANCE, RECEPTOR SCENARIOS).

THE CHARACTERIZATION REQUIREMENTS AND RISK ASSESSMENT METHODOLOGY WILL BE JOINTLY DEVELOPED BY DOE AND ECOLOGY PRIOR TO THE SUBMITTAL.

M-45-06B

SUBMIT A CERTIFIED (FRAMEWORK) SST SYSTEM CLOSURE PLAN MODIFICATION AND S-112 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN, AS AN APPLICATION FOR A MODIFICATION TO THE HANFORD SITE-WIDE HAZARDOUS WASTE FACILITY PERMIT TO ECOLOGY. THIS SUBMITTAL WILL INCLUDE ALL REQUIRED CLOSURE PLAN ELEMENTS. ADDITIONALLY, THIS SUBMITTAL WILL INCLUDE THE FOLLOWING:

3/31/2005

1. CHARACTERIZATION APPROACH FOR RESIDUAL WASTES. THIS APPROACH WILL SUPPORT DECISIONS REGARDING THE COMPLIANCE OF THE RESIDUAL WASTE WITH APPLICABLE REGULATORY REQUIREMENTS (INCLUDING BUT NOT LIMITED TO: CHARACTERIZATION NEEDS, WORK REQUIREMENTS, WORK SCHEDULES, AND CONTAMINANTS OF CONCERN FOR; RISK ASSESSMENT, LAND DISPOSAL RESTRICTION (LDR), AND THE WASHINGTON STATE HAZARDOUS WASTE MANAGEMENT ACT).
2. A RISK ASSESSMENT METHODOLOGY INCLUSIVE OF THE ASSUMPTIONS, APPROACH, CONCEPTUAL MODEL, AND METRICS (E.G. POINT OF COMPLIANCE, RECEPTOR SCENARIOS).

Description/Justification of Change Cont.

THE CHARACTERIZATION REQUIREMENTS AND RISK ASSESSMENT METHODOLOGY WILL BE JOINTLY DEVELOPED BY DOE AND ECOLOGY PRIOR TO THE SUBMITTAL

M-45-06C

SUBMIT A CERTIFIED (FRAMEWORK) SST SYSTEM CLOSURE PLAN MODIFICATION AND S-102 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN, AS AN APPLICATION FOR A MODIFICATION TO THE HANFORD SITE-WIDE HAZARDOUS WASTE FACILITY PERMIT TO ECOLOGY. THIS SUBMITTAL WILL INCLUDE ALL REQUIRED CLOSURE PLAN ELEMENTS. ADDITIONALLY, THIS SUBMITTAL WILL INCLUDE THE FOLLOWING:

3/31/2006

1. CHARACTERIZATION APPROACH FOR RESIDUAL WASTES. THIS APPROACH WILL SUPPORT DECISIONS REGARDING THE COMPLIANCE OF THE RESIDUAL WASTE WITH APPLICABLE REGULATORY REQUIREMENTS (INCLUDING BUT NOT LIMITED TO: CHARACTERIZATION NEEDS, WORK REQUIREMENTS, WORK SCHEDULES, AND CONTAMINANTS OF CONCERN FOR; RISK ASSESSMENT, LAND DISPOSAL RESTRICTION (LDR), AND THE WASHINGTON STATE HAZARDOUS WASTE MANAGEMENT ACT).
2. A RISK ASSESSMENT METHODOLOGY INCLUSIVE OF THE ASSUMPTIONS, APPROACH, CONCEPTUAL MODEL, AND METRICS (E.G. POINT OF COMPLIANCE, RECEPTOR SCENERIOS).

THE CHARACTERIZATION REQUIREMENTS AND RISK ASSESSMENT METHODOLOGY WILL BE JOINTLY DEVELOPED BY DOE AND ECOLOGY PRIOR TO THE SUBMITTAL

M-45-06D

SUBMIT A CERTIFIED (FRAMEWORK) SST SYSTEM CLOSURE PLAN MODIFICATION AND C-104 WASTE RETRIEVAL AND CLOSURE DEMONSTRATION PLAN, AS AN APPLICATION FOR A MODIFICATION TO THE HANFORD SITE-WIDE HAZARDOUS WASTE FACILITY PERMIT TO ECOLOGY. THIS SUBMITTAL WILL INCLUDE ALL REQUIRED CLOSURE PLAN ELEMENTS. ADDITIONALLY, THIS SUBMITTAL WILL INCLUDE THE FOLLOWING:

6/30/2007

1. CHARACTERIZATION APPROACH FOR RESIDUAL WASTES. THIS APPROACH WILL SUPPORT DECISIONS REGARDING THE COMPLIANCE OF THE RESIDUAL WASTE WITH APPLICABLE REGULATORY REQUIREMENTS (INCLUDING BUT NOT LIMITED TO: CHARACTERIZATION NEEDS, WORK REQUIREMENTS, WORK SCHEDULES, AND CONTAMINANTS OF CONCERN FOR; RISK ASSESSMENT, LAND DISPOSAL RESTRICTION (LDR), AND THE WASHINGTON STATE HAZARDOUS WASTE MANAGEMENT ACT).
2. A RISK ASSESSMENT METHODOLOGY INCLUSIVE OF THE ASSUMPTIONS, APPROACH, CONCEPTUAL MODEL, AND METRICS (E.G. POINT OF COMPLIANCE, RECEPTOR SCENERIOS).

THE CHARACTERIZATION REQUIREMENTS AND RISK ASSESSMENT METHODOLOGY WILL BE JOINTLY DEVELOPED BY DOE AND ECOLOGY PRIOR TO THE SUBMITTAL

M-45-06E

SUBMIT A CERTIFIED (FRAMEWORK) SST SYSTEM CLOSURE PLAN MODIFICATION FOR TANKS S-105, S-106, AND S-103 CLOSURE DEMONSTRATION PLAN, AS AN APPLICATION FOR A MODIFICATION TO THE HANFORD SITE-WIDE HAZARDOUS WASTE FACILITY PERMIT TO ECOLOGY. THIS SUBMITTAL WILL INCLUDE ALL REQUIRED CLOSURE PLAN ELEMENTS, AND PROVIDE A SEPARATE STAND ALONE EVALUATION FOR EACH TANK. ADDITIONALLY, THIS SUBMITTAL WILL INCLUDE THE FOLLOWING:

12/31/2008

1. CHARACTERIZATION APPROACH FOR RESIDUAL WASTES IN S-105, S-106, AND S-103. THIS APPROACH WILL SUPPORT DECISIONS REGARDING THE COMPLIANCE OF THE RESIDUAL WASTE WITH

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Description/Justification of Change Cont.

APPLICABLE REGULATORY REQUIREMENTS (INCLUDING BUT NOT LIMITED TO: CHARACTERIZATION NEEDS, WORK REQUIREMENTS, WORK SCHEDULES, AND CONTAMINANTS OF CONCERN FOR; RISK ASSESSMENT, LAND DISPOSAL RESTRICTION (LDR), AND THE WASHINGTON STATE HAZARDOUS WASTE MANAGEMENT ACT).

2. A RISK ASSESSMENT METHODOLOGY FOR TANKS S-105, S-106, AND S-103, INCLUSIVE OF THE ASSUMPTIONS, APPROACH, CONCEPTUAL MODEL, AND METRICS (E.G., POINT OF COMPLIANCE, RECEPTOR SCENARIOS).

THE CHARACTERIZATION REQUIREMENTS AND RISK ASSESSMENT METHODOLOGY WILL BE JOINTLY DEVELOPED BY DOE AND ECOLOGY PRIOR TO THE SUBMITTAL.

M-45-06-T03	INITIATE CLOSURE ACTIONS ON AN OPERABLE UNIT OR TANK FARM BASIS. CLOSURE SHALL FOLLOW COMPLETION OF THE RETRIEVAL ACTIONS UNDER PROPOSED MILESTONE M-45-05. CLOSURE WILL BE DEFINED IN AN APPROVED CLOSURE PLAN FOR THE DEMONSTRATION FARM. FINAL CLOSURE IS DEFINED AS REGULATORY APPROVAL OF COMPLETION OF CLOSURE ACTIONS.	3/31/2012
M-45-06-T04	COMPLETE CLOSURE ACTIONS ON ONE OPERABLE UNIT OR TANK FARM.	3/31/2014
M-45-09E	SUBMIT ANNUAL PROGRESS REPORTS ON THE DEVELOPMENT OF WASTE TANK LEAK MONITORING/DETECTION AND MITIGATION ACTIVITIES IN SUPPORT OF M-45-08.  REPORTS WILL PROVIDE A DESCRIPTION OF WORK ACCOMPLISHED UNDER M-45-08, TECHNOLOGIES, APPLICATIONS, COST SCHEDULE, AND TECHNICAL DATA. REPORTS WILL ALSO EVALUATE DEMONSTRATIONS PERFORMED BY DOE AND PRIVATE INDUSTRY FOR APPLICABILITY TO SST RETRIEVAL AND PROVIDE RECOMMENDATIONS FOR FURTHER TESTING FOR USE IN RETRIEVAL OPERATIONS.	9/30/2000 (Completed)
M-45-12-T01	SUBMIT AN OPTIONS REPORT DOCUMENTING DOE ASSESSMENT OF ACTIONS THAT COULD BE TAKEN TO INCREASE AVAILABLE TANK SPACE FOR SST WASTE RETRIEVAL.  THIS REPORT WILL EVALUATE AND DOCUMENT OPTIONS FOR ACQUIRING ADDITIONAL STORAGE SPACE FOR SST RETRIEVAL IN ADDITION TO THAT REQUIRED UNDER THIS M-45-00-01A CHANGE REQUEST. PRINCIPLE ACTIONS REQUIRED TO IMPLEMENT EACH OPTION WITHIN A REASONABLE TIME WILL BE IDENTIFIED. THE PRINCIPLE OPTIONS WILL HAVE DETAILED COST AND SCHEDULES FOR IMPLEMENTATION.	2/28/2002 (Completed)
M-045-55	SUBMIT TO ECOLOGY FOR REVIEW AND APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT A PHASE 1 RFI REPORT INTEGRATING RESULTS OF DATA GATHERING ACTIVITIES AND EVALUATIONS FOR WMAS S-SX, T, TX-TY, AND B-BX-BY AND RELATED ACTIVITIES, INCLUDING GROUNDWATER MONITORING AND IMPACTS ASSESSMENT USING HANFORD SITE GROUNDWATER MODELS, WITH CONCLUSIONS AND RECOMMENDATIONS.	2/28/2004
M-045-55-T02	SUBMIT TO ECOLOGY FOR REVIEW AND COMMENT AS AN AGREEMENT SECONDARY DOCUMENT A FIELD INVESTIGATION REPORT PURSUANT TO THE SITE-SPECIFIC SST WMA PHASE 1 RFI/CMS WORK PLAN ADDENDA FOR WMA B-BX-BY.	1/31/2003
M-045-55-T03	SUBMIT TO ECOLOGY FOR REVIEW AND COMMENT AS AN AGREEMENT SECONDARY DOCUMENT A FIELD INVESTIGATION REPORT PURSUANT TO THE SITE-SPECIFIC SST WMA PHASE 1 RFI/CMS WORK PLAN ADDENDA FOR WMA T AND WMA TX-TY.	6/30/2003

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Description/Justification of Change Cont.

M-045-56 COMPLETE IMPLEMENTATION OF AGREED-TO INTERIM MEASURES. To Be Determined

SPECIFIC INTERIM MEASURES WILL BE IMPLEMENTED PURSUANT TO AGREEMENT COMMITMENTS (E.G., SEE INTERIM MILESTONE M-45-57). INTERIM MEASURES MAY ALSO BE REQUIRED BY ECOLOGY, PROPOSED BY DOE IN THE SST WMA RFI REPORT (M-45-55) (OR ENGINEERING STUDIES INCLUDING THAT ADDRESSED IN TARGET MILESTONE M-45-56-T01), OR ESTABLISHED BY AGREEMENT OF THE PARTIES AT ANY TIME DURING THE CORRECTIVE ACTION PROCESS. ALSO SEE TABLE 1 OF AGREEMENT CHANGE CONTROL FORM #M-45-98-03.

ECOLOGY AND DOE AGREE, AT A MINIMUM, TO MEET YEARLY (BY JULY OR AS NEEDED TO SUPPORT ANNUAL BUDGETING) FOR THE SPECIFIC PURPOSE OF ASSESSING THE ADEQUACY OF INFORMATION, AND THE NEED FOR THE ESTABLISHMENT OF ADDITIONAL AGREEMENT INTERIM MEASURES. ADDITIONAL AGREEMENT INTERIM MEASURES SHALL BE DOCUMENTED THROUGH ESTABLISHMENT OF INTERIM MILESTONES AND ASSOCIATED TARGET DATES AS AGREED NECESSARY BY THE PARTIES

M-045-58 SUBMIT TO ECOLOGY FOR REVIEW AND APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT A CORRECTIVE MEASURES STUDY FOR INTERIM CORRECTIVE MEASURES (PENDING RESULTS AND CONCLUSIONS IN THE PHASE 1 RFI REPORT-MILESTONE M-45-55 OR SUBSEQUENT RFI REPORTS). To Be Determined

M-045-59 CONTROL SURFACE WATER INFILTRATION PATHWAYS AS NEEDED TO CONTROL OR SIGNIFICANTLY REDUCE THE LIKELIHOOD OF MIGRATION OF SUBSURFACE CONTAMINATION TO GROUNDWATER AT THE SST WMAS (PENDING THE CMS REPORT, MILESTONE M-45-58, AND IMPLEMENTATION OF OTHER INTERIM CORRECTIVE MEASURES. To Be Determined

DECISIONS ON CONTROLLING SURFACE WATER INFILTRATION PATHWAYS WILL BE MADE BY EVALUATING THE ROLE OF SURFACE WATER INFILTRATION AND THE TRANSPORT OF SUBSURFACE CONTAMINATION TO GROUNDWATER. BASED ON THE CORRECTIVE MEASURES STUDY (M-45-58) INTERIM SURFACE BARRIERS AND/OR OTHER INFILTRATION CONTROLS MAY BE REQUIRED.

M-045-60 SUBMIT TO ECOLOGY FOR REVIEW AND APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT DOE'S RFI/CMS WORK PLAN FOR SST WMAS. To Be Determined

THIS RFI/CMS WORK PLAN SHALL DOCUMENT THE ADDITIONAL INTERIM MEASURES AND FURTHER INVESTIGATIONS NEEDED FOR DECISIONS ON RETRIEVAL, CLOSURE, AND CORRECTIVE MEASURES FOR THE SST WMAS.

**Modifications to the M-46 milestone series incorporated into the HFFACO by approval of this M-45-02-03 Change Request are shown here as either shaded additions, or strikethrough deletions.**

**M-46-21 COMPLETE IMPLEMENTATION OF DOUBLE SHELL TANK SPACE OPTIMIZATION STUDY RECOMMENDATIONS (TANK SPACE OPTIONS REPORT, DOCUMENT NO. RPP-7702, APRIL 12, 2001) 12/31/2005**

**WORK UNDER THIS INTERIM MILESTONE SHALL HAVE THE OBJECTIVE OF CREATING SUFFICIENT DOUBLE-SHELL TANK STORAGE SPACE TO ACCOMMODATE THE PARTIES' WASTE RETRIEVAL AND CLOSURE DEMONSTRATIONS AT TANKS S-112, S-102, C-104, S-105, S-106, S-103 AND C-106. SUCH ACTIONS SHALL INCLUDE, BUT ARE NOT LIMITED TO DECREASING DEDICATED OPERATIONAL SPACE, CONCENTRATING WASTES TO A HIGHER SPECIFIC GRAVITY, AND RAISING ALLOWABLE TANK LEVELS.**