



U.S. Department of Energy
Office of River Protection

0055232

P.O. Box 450
Richland, Washington 99352

01-AMSQ-044

JUL 13 2001

Mr. Michael A. Wilson, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
1315 W. Fourth Avenue
Kennewick, Washington 99336

RECEIVED
JUL 31 2001

EDMC

Dear Mr. Wilson:

U. S. DEPARTMENT OF ENERGY (DOE), OFFICE OF RIVER PROTECTION (ORP)
SUBMITTAL FOR STATE OF WASHINGTON DEPARTMENT OF ECOLOGY (ECOLOGY)
APPROVAL, PROPOSED HANFORD FEDERAL FACILITY AGREEMENT AND
CONSENT ORDER (TRI-PARTY AGREEMENT) CHANGE REQUEST FOR SINGLE-
SHELL TANK (SST) INTEGRITY ASSESSMENT, AND LEAK DETECTION AND
MONITORING

- References:
1. Ecology Notice of Correction letter from S. V. Moore to H. Boston, ORP and M. P. DeLozier, CHG, "Re: Dangerous Waste Compliance Inspection of the Single Shell Tank Facility," dated February 2, 2001. ✓
 2. Signed agreement between R. Stanley, Lead Negotiator, Ecology, and J. E. Rasmussen, Lead Negotiator, ORP, "Extension of Time Allotted for Completion of Single-Shell Tank (SST) Integrity Assessment, Leak Detection and Monitoring, and Related Issue Settlement Discussions," dated May 30, 2001. ✓

In response to the asserted violations in Reference 1, Ecology and ORP have made significant progress in negotiations to develop Tri-Party Agreement milestones for SST system integrity assessment, and leak detection and monitoring, to meet the completion deadline of July 13, 2001, agreed to in Reference 2. Reference 1 directed that "Within one hundred and twenty days (120) of receipt of this letter, DOE must complete negotiations of Tri-Party Agreement milestones with Ecology to develop a structural integrity assessment program to support the extended storage of waste currently allowed by M-45 (and) to develop a monitoring program for the SST System." Despite the good faith effort, hard work and diligence of our staffs, they were unable to reach final agreement on all issues by the agreed-upon deadline.

ORP proposes a 30-day extension to complete negotiations of the remaining issues. However, in the event you choose to deny our extension request, to preserve our rights under the Tri-Party Agreement, please find a signed ORP Tri-Party Agreement proposed change request that responds to the alleged violations and embodies the essence of Ecology's July 9, 2001, proposed change request. The approach proposed in our change request provides for a thorough and complete SST System evaluation of regulatory requirements followed by a commitment for upgrades. ORP firmly believes that the commitments we sign up to must be consistent with mission requirements, technically achievable, and fiscally affordable.

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There are several areas where we believe the parties are in agreement:

- ORP has agreed to revise the Hazardous Waste Facility Permit application Form 3 for the SST system.
- ORP has agreed to near-term Liquid Observation Well upgrades, with a priority on high-risk tanks based on analysis of the technical criteria.
- ORP is in agreement that ORP will provide an SST System description document, and what the scope of that document should be, and the current status of SST system components.
- ORP has agreed to submit for Ecology approval, an SST System "Functions and Requirements" document evaluating requirements and upgrade options for tank system integrity, containment and detection of releases, inspections and response to leaks or spills, and disposition of leaking or unfit for use tank systems, as an Agreement primary document.
- ORP is in agreement to modify M-45-06-T05, "Submit tank farm closure/post closure workplan update," to provide a detailed description and depiction of all components of the SST System.

However, ORP has been unable to reach agreement on final language for a milestone regarding integrity assessments of the SST System. There is one fundamental issue that ORP is concerned with in the Ecology July 9, 2001, proposal. ORP believes that a requirement for an Independent Qualified Registered Professional Engineer (IQRPE) certification on tank integrity is not technically achievable. The SSTs were not designed or built to current environmental requirements and sixty-seven of them are already known or assumed to have leaked. Therefore, it would be inappropriate to ask any IQRPE to certify their integrity. ORP believes the issue is important enough however that ORP proposed a milestone for submittal of a SST bounding integrity assessment report to document and assess the integrity of the SSTs pursuant to the requirements of 40 CFR 265.191. The report will determine SST structural integrity for a bounding set of SSTs. The report will conclude whether or not the SSTs have sufficient structural strength and compatibility with the wastes stored to ensure that they will not collapse, rupture, or structurally fail while continuing to store wastes. ORP would convene an independent panel of experts to review the analysis

ORP is requesting that you consider and approve the enclosed change request, or if you agree to extend these negotiations pursuant to our request, please disregard the attached change request and we will subsequently submit a formal withdrawal. If you have any questions on this letter or the change request, please do not hesitate to contact me (509) 372-0947, or your staff may contact Mary Beth Burandt, (509) 373-9160.

Sincerely,



James E. Rasmussen, Director
Environmental Management Division

EMD:JER

Enclosure

cc: See page 3

JUL 13 2001

Mr. Michael A. Wilson
01-AMSQ-044

-3-

cc w/encl:

R. Gay, CTUIR

P. Sobotta, NPT

R. Jim, YN

E. Savage, BNI

M. J. Riess, CHG

R. F. Stanley, Ecology

D. R. Sherwood, EPA

J. S. Hertzal, FHI

O. S. Kramer, FHI

T. Martin, HAB

M. L. Blazek, Oregon Energy

C. E. Clark, RL

J. B. Hebdon, RL

Administrative Record

Change Number M-23-01-01	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date July 13, 2001																
Originator DOE-ORP		Phone																
Class of Change <input type="checkbox"/> I – Signatories <input checked="" type="checkbox"/> II – Executive Manager <input type="checkbox"/> III – Project Manager																		
Change Title Incorporation of compliance measures within the <u>Hanford Federal Facility Agreement and Consent Order (HFFACO or TPA)</u> . Establishment of requirements regarding the assessment of the integrity of U.S. Department of Energy (DOE) single-shell mixed waste storage tanks (SSTs), associated leak detection and monitoring requirements, and associated documents.																		
Description/Justification of Change Introduction: Ecology and DOE have developed the requirements delineated within this M-23-01-01 Change Request as corrective measures following DOE's receipt of Ecology findings resulting from its single-shell tank (SST) compliance inspection, i.e., <ol style="list-style-type: none"> 1. <u>Dangerous Waste Compliance Inspection Report #99-168, Single-Shell Tank Farms</u>, Steven V. Moore, Washington Department of Ecology, January 31, 2001, and 2. <u>Dangerous Waste Compliance Inspection of the Single-Shell Tank Facility</u>, Steven V. Moore, Washington Department of Ecology to Dr. Harry Boston, DOE Office of River Protection and Ms. M. P. Delozier, CH2M HILL Hanford Group, February 2, 2001. 																		
Impact of Change Establishment of requirements necessary for the determination of the integrity of DOE's SST system, for adequate SST leak detection and monitoring, and actions necessary to comply with requirements for the identification of current and past structures and waste management areas associated with DOE's SST facility.																		
Affected Documents The <u>Hanford Federal Facility Agreement and Consent Order</u> , as amended, including Appendix D (Action Plan) thereto; DOE's Annual Land Disposal Restrictions Report; Hanford site internal planning, management, and budget documents; DOE and DOE contractor baselines, and baseline change control documents; multi-year work plans; sitewide systems engineering control documents; project management plans; the Hanford Site Integrated Priority List (IPL); Tank Farm Closure/Post-Closure Workplan Update; and the SST RCRA Part A Permit Application Form 3.																		
Approvals <table border="0" style="width: 100%;"> <tr> <td style="width: 45%; border-bottom: 1px solid black;">Ecology</td> <td style="width: 15%; border-bottom: 1px solid black;">Date</td> <td style="width: 15%; text-align: center;">_____ Approved</td> <td style="width: 25%; text-align: center;">_____ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;"><i>DC Bryson</i></td> <td style="border-bottom: 1px solid black;">7/13/01</td> <td style="text-align: center;">X Approved</td> <td style="text-align: center;">_____ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;">DOE</td> <td style="border-bottom: 1px solid black;">Date</td> <td style="text-align: center;">_____ Approved</td> <td style="text-align: center;">_____ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;">EPA</td> <td style="border-bottom: 1px solid black;">Date</td> <td style="text-align: center;">_____ Approved</td> <td style="text-align: center;">_____ Disapproved</td> </tr> </table>			Ecology	Date	_____ Approved	_____ Disapproved	<i>DC Bryson</i>	7/13/01	X Approved	_____ Disapproved	DOE	Date	_____ Approved	_____ Disapproved	EPA	Date	_____ Approved	_____ Disapproved
Ecology	Date	_____ Approved	_____ Disapproved															
<i>DC Bryson</i>	7/13/01	X Approved	_____ Disapproved															
DOE	Date	_____ Approved	_____ Disapproved															
EPA	Date	_____ Approved	_____ Disapproved															

See also the following correspondence:

Description/Justification of Change (continued)

- 54313
3. **00-OSD-143, Resolution of the State of Washington Department of Ecology (Ecology) Observations Concerning Tank Monitoring and Structural Integrity Assessment for the Single-Shell Tank (SST) System into the Hanford Federal Facility Agreement and Consent Order (Tri Party Agreement)**, Clifford E. Clark, DOE Office of Regulatory Liaison to Michael A. Wilson, Washington Department of Ecology, Nuclear Waste Program, November 21, 2000.
 4. **00-OSD-180, Resolution of the State of Washington Department of Ecology Observations and Findings Concerning Single-Shell Tanks**, Clifford E. Clark, DOE Office of Regulatory Liaison, to Michael A. Wilson, Washington Department of Ecology, Nuclear Waste Program, December 28, 2000.
 5. **01-OPD-021, The U. S. Department of Energy, Office of River Protection (ORP) Receipt of the State of Washington Department of Ecology (Ecology) Notice of Correction (NoC)**, James E. Rasmussen, DOE Office of River Protection to Michael A. Wilson, Washington Department of Ecology, Nuclear Waste Program, March 6, 2001.

The U. S. Department of Energy's single-shell tank farms (SST) system is located in the 200 East and West Areas on the central plateau of the Hanford Federal Reservation. The SST facility stores mixed waste (MW) derived from the reprocessing of nuclear fuel at Hanford that began in the 1940's. The SST facility primarily consists of 149 single-shell tanks and ancillary equipment arranged into 12 tank farms. All are well beyond their original design life. The SST facility is an interim status Treatment, Storage, or Disposal (TSD) unit within the Hanford TSD facility and as such is subject to interim status requirements of Washington Administrative Code (WAC) 173-303 and by reference 40 Code of Federal Regulations (CFR) 265, Subpart J.

The SSTs contain varying types and amounts of MW. Many tanks are empty or nearly empty and some are nearly full. In some, the waste is nearly dry while others contain significant aqueous or organic liquids in the form of interstitial or free liquids. The majority of SST waste is highly radioactive. It contains fission products and chemicals resulting from chemical separation of fissile material from irradiated nuclear fuel. The pumpable liquid is being removed from the SSTs in accordance with the Interim Stabilization Consent Decree.

Ecology's inspection of interim status compliance at the Hanford SSTs consisted of review of current and historic records, interviews of U. S. Department of Energy (DOE) and contractor personnel, and a facility walkdown. As a result of this inspection, Ecology has identified several alleged violations of regulatory requirements and related concerns.

VIOLATIONS:

1. **40 CFR 265.191 - Assessment of existing tank system's integrity by reference of WAC 173-303-400, Interim Status Facility Standards.**

USDOE did not complete an assessment of Single Shell Tank (SST) system integrity to determine that the SST system is not leaking or is unfit for use. This assessment was required to be completed by January 12, 1990, per WAC 173-303-400 (3) and 40 CFR 265.191(a).

40 CFR 265.191 further requires that the owner or operator obtain and keep on file at the facility a written assessment reviewed and certified by an independent, qualified, registered professional engineer, in accordance with § 270.11(d), that attests to the tank system's integrity.

2. **40 CFR 265.193 – Containment and detection of releases by reference of WAC 173-303-400, Interim Status Facility Standards.**

USDOE did not install secondary containment for the SST system prior to January 12, 1991, per WAC 173-303-400 (3) and 40 CFR 265.193 (a).

3. **40 CFR 265.195 – Inspections by reference of WAC 173-303-400, Interim Status Facility Standards.**

USDOE does not inspect all SST monitoring equipment and leak detection equipment at least once each operating day per WAC 173-303-400 (3) and 40 CFR 265.195 (a).

Description/Justification of Change (continued)

4. 40 CFR 265.196 – Response to leaks or spills and disposition of leaking or unfit-for-use tank systems by reference of WAC 173-303-400, Interim Status Facility Standards.

USDOE has not removed all waste from the SST system per 40 CFR 265.196(b) and closed the SST system per 40 CFR 265.196(e).

The following regulatory compliance concerns were also noted by Ecology.

1. WAC 173-303-803 - Permit application requirements

USDOE's Part A Hazardous Waste Facility permit application Form 3 for the SST system does not accurately describe all current and past structures and waste management areas associated with the SST system as required by WAC 173-303-803(3) and WAC 173-303-805.

2. WAC 173-303-360 – Emergencies.

Emergency response procedures were not fully utilized after a waste transfer line leak. This concern is based on Ecology observations following a January 6, 2000 leak from a waste transfer line that occurred during saltwell pumping of tank S-103 in DOE's S tank farm. This issue was closed and is reflected in changes that were made to the Building Emergency Plan emergency response procedures, and the environmental notification procedure.

The SST System was constructed and first put into operation during the period from 1943 to 1964. As such, these SSTs predated enactment of the Resource Conservation and Recovery Act (RCRA) in 1976, 42 United States Code (U.S.C.) §§ 6901, et seq., as well as promulgation of applicable implementing regulations. The SST System was taken out of active service by DOE in 1980 but continues to store wastes. Sixty-seven (67) of the tanks are known or assumed to have leaked.

From an environmental regulatory compliance perspective, the SST System has been addressed under certain milestones in the HFFACO since that Agreement was executed in 1989. The HFFACO is the agreed-upon path for bringing the SST System into compliance through closure. Starting in 1999, removal of pumpable liquids from the SSTs has been addressed under the provisions of a Consent Decree that is separate and distinct from the HFFACO. Because immediate removal of waste remaining in the SSTs is not possible, DOE and Ecology have agreed to HFFACO milestones in the M-45 series to retrieve these wastes and close the SST System.

The framers of the HFFACO recognized that the SSTs do not and could not comply with all aspects of the current RCRA requirements for similar, regulated Underground Storage Tanks (USTs). There are, however, steps that can be taken in parallel with the HFFACO path for closure that will bring the SST System closer to compliance with current RCRA regulatory requirements.

In recognition of the foregoing and to resolve the outstanding Notice of Correction (NoC) referred to above, DOE and Ecology agree that, by approval of this Change Request, the following HFFACO M-23-00 series milestone requirements are incorporated into the HFFACO.

M-23-21

SUBMIT REVISED HAZARDOUS WASTE FACILITY PERMIT APPLICATION FORM THREE (3).

November 30, 2001

DOE'S REVISED FORM 3 SHALL ACCURATELY IDENTIFY, DESCRIBE AND DEPICT ALL CURRENT AND PAST STRUCTURES AND WASTE MANAGEMENT AREAS ASSOCIATED WITH THE SST SYSTEM AS REQUIRED BY WAC 173-303-803(3) AND WAC 173-303-805. THE FORM 3 WILL BE CONSISTENT IN FORMAT AND CONTENT WITH OTHER FORM 3'S APPROVED FOR THE HANFORD FACILITY RCRA PERMIT. THE TANK FARM CLOSURE/POST-CLOSURE WORKPLAN UPDATE, AS DEFINED IN M-45-06-T05, WILL INCLUDE A DESCRIPTION OF ALL COMPONENTS THAT ARE NECESSARY TO TREAT, STORE, OR TRANSFER HAZARDOUS AND OR MIXED WASTE WITHIN THE RCRA BOUNDARY OF THE SST SYSTEM.

Description/Justification of Change (continued)

M-23-22	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) PER THE SCHEDULE IDENTIFIED IN M-23-22A THROUGH M-23-22G, FOR SSTs: AX-103, B-101, T-101, T-109, TX-103, TX-104, B-107, B-108, B-109, BY-108, BX-110, TX-116, C-102, C-105, BX-109, TY-105, U-110, A-106, C-112, SX-111, SX-112, S-107, C-103, AND TX-105. THE ORDER OF INSTALLATION OF THESE LOWs SHALL GIVE PRIORITY TO THOSE CONTAINING PREDOMINANTLY SALT CAKE, OR WHICH OTHERWISE POSE A HIGHER RISK OF ENVIRONMENTAL CONTAMINATION SHOULD THE TANK LEAK. THE FREQUENCY AND OTHER LEAK DETECTION AND MONITORING REQUIREMENTS WILL BE REVIEWED AS PART OF THE DOCUMENT TO BE PRODUCED FOR M-23-24.	September 30, 2004
M-23-22A	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN LIQUID OBSERVATION MONITORING FOR FOUR SSTs.	March 31, 2002
M-23-22B	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN LIQUID OBSERVATION MONITORING FOR FOUR SSTs.	September 30, 2002
M-23-22C	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN LIQUID OBSERVATION MONITORING FOR FOUR SSTs.	March 31, 2003
M-23-22D	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN LIQUID OBSERVATION MONITORING FOR FOUR SSTs.	September 30, 2003
M-23-22E	PROCURE NECESSARY EQUIPMENT TO SUPPORT ADDITIONAL LOW MONITORING SYSTEMS.	September 30, 2003
M-23-22F	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN LIQUID OBSERVATION MONITORING FOR FOUR SSTs.	March 31, 2004
M-23-22G	COMPLETE THE INSTALLATION OF LIQUID OBSERVATION WELLS (LOWs) AND BEGIN LIQUID OBSERVATION MONITORING FOR FOUR SSTs.	September 30, 2004
M-23-23-T01	SUBMIT THE SST SYSTEM DESCRIPTION AND CURRENT STATUS OF THE SYSTEM COMPONENTS.	February 28, 2002

THIS DOCUMENT WILL LIST EACH OF THE COMPONENTS OF THE EXISTING SST SYSTEM THAT WILL BE ADDRESSED IN M-23-24. COMPONENTS ARE THOSE PIECES OF EQUIPMENT USED TO STORE OR TRANSFER LIQUID MIXED WASTE. THESE COMPONENTS CONSIST OF THE 149 SSTs AND THEIR ANCILLARY EQUIPMENT. ANCILLARY EQUIPMENT WITHIN THE SST SYSTEM INCLUDES ALL SUBORDINATE TANK SYSTEMS AND THEIR VAULTS, TRANSFER PIPELINES, PUMP PITS, VALVE PITS, LIFT STATIONS, CATCH TANKS, AND UNLOADING STATIONS. NOT INCLUDED ARE INFRASTRUCTURE EQUIPMENT, SUCH AS ELECTRICAL AND VENTILATION SYSTEMS, INACTIVE MISCELLANEOUS UNDERGROUND STORAGE TANKS (IMUSTs), AND EXCESS FACILITIES (242-S, 242-T, 244-AR, 244-CR). FOR EACH COMPONENT, THE DOCUMENT WILL PRESENT THE COMPONENT STATUS (E.G. ACTIVELY STORING MIXED WASTE (MW), THE VOLUME AND FORM, EXISTING LEAK DETECTION AND MONITORING, IF THE COMPONENT IS PLUGGED, OR IF THE COMPONENT HAS LEAKED). THE DATA WILL BE PRESENTED IN TABULAR FORM. FOR COMPONENTS WHERE APPLICABLE THERE WILL BE A DESCRIPTION OF:

- A) THE PRESENCE OR ABSENCE OF MONITORING INSTRUMENTS;
- B) A DOE ASSESSMENT AS TO FUNCTIONALITY OF MONITORING INSTRUMENTS;
- C) METHODS OR PROCESSES UTILIZED FOR THE EVALUATION OF THE

Description/Justification of Change (continued)

- STATUS OF SST SYSTEM MONITORING COMPONENTS;
- D) MONITORING FREQUENCIES;
 - E) LEAK DETECTION SURVEILLANCE AND MONITORING REQUIREMENTS;
 - F) THE LENGTH OF TIME DOE PROPOSES THAT INSTRUMENTS MAY BE OUT OF SERVICE (FOR MAINTENANCE OR REPAIR) PRIOR TO ECOLOGY NOTIFICATION; AND
 - G) DOE'S PROPOSED CHANGE PROCESS FOR MODIFYING SPECIFIC COMPONENT LEAK-DETECTION INSTRUMENTATION AS COMPONENT CONDITIONS (OR INSTRUMENTATION) CHANGES.

M-23-24

SUBMIT FOR ECOLOGY APPROVAL, A SINGLE-SHELL TANK SYSTEM FUNCTIONS AND REQUIREMENTS DOCUMENT OF COMPLIANCE WITH REQUIREMENTS FOR TANK SYSTEM INTEGRITY, CONTAINMENT AND DETECTION OF RELEASES, INSPECTIONS AND RESPONSE TO LEAKS OR SPILLS, AND DISPOSITION OF LEAKING OR UNFIT FOR USE TANK SYSTEMS.

September 15, 2002

THE REQUIREMENTS ARE SET FORTH IN 40 CFR 265.191, .193, .195, AND .196. THE FUNCTIONS AND REQUIREMENTS DOCUMENT SHALL BE SUBMITTED FOR ECOLOGY APPROVAL AS AN AGREEMENT PRIMARY DOCUMENT PURSUANT TO ACTION PLAN SECTION 9.2.1.

FOR EACH COMPONENT, OR GROUPS OF COMPONENTS, DEFINED IN M-23-23-T01, THE DOCUMENT WILL:

- 1) ASSESS THE COMPONENT'S COMPLIANCE TO THE REGULATIONS;
- 2) FOR THOSE ITEMS THAT ARE NOT IN FULL COMPLIANCE, EVALUATE OPTIONS TO ACHIEVE COMPLIANCE;
- 3) ASSESS AND SELECT THOSE OPTIONS THAT ARE TECHNICALLY ACHIEVABLE WHICH MEET THE INTENT OF THE REGULATIONS TO THE EXTENT PRACTICAL, AND PRESENT THE BASIS FOR THE SELECTION; AND
- 4) PRESENT THE PLANS AND SCHEDULES FOR UPGRADING THE HARDWARE AND SYSTEMS PER THE ASSESSMENT RESULTS. THIS WILL INCLUDE DEFINING THE LEVEL OF STRUCTURAL ASSESSMENT AND MONITORING, LEAK ASSESSMENT AND MONITORING, REPORTING, AND HARDWARE UPGRADES. FOR EACH ANCILLARY COMPONENT, DOE WILL DETERMINE WHETHER IT IS LEAKING OR UNFIT FOR USE. FOR ANY ANCILLARY COMPONENT THAT DOE DETERMINES IS NOT LEAKING AND IS FIT FOR USE TO STORE OR TRANSFER WASTE, A WRITTEN ASSESSMENT WILL BE CERTIFIED BY AN INDEPENDENT, QUALIFIED, REGISTERED, PROFESSIONAL ENGINEER (IQRPE) THAT ATTESTS TO THE COMPONENT'S INTEGRITY, WHERE REASONABLE AND APPROPRIATE.

THE DOCUMENT SHALL BE ACCOMPANIED WITH A CORRESPONDING DRAFT AGREEMENT IMPLEMENTATION SCHEDULE FOR UPGRADES AND PROGRAMMATIC CHANGES.

Description/Justification of Change (continued)

M-23-25 SUBMIT A SINGLE SHELL TANK BOUNDING INTEGRITY ASSESSMENT REPORT. December 15, 2002

THIS REPORT SHALL DOCUMENT AND ASSESS THE INTEGRITY OF DOE'S SSTs PURSUANT TO THE REQUIREMENTS OF 40 CFR 265.191. THIS REPORT HAS THE OBJECTIVE OF DETERMINING SST STRUCTURAL INTEGRITY FOR A BOUNDING SET OF SSTs AND WHETHER OR NOT THE SSTs ARE ADEQUATELY DESIGNED AND HAVE SUFFICIENT STRUCTURAL STRENGTH AND COMPATIBILITY WITH THE WASTES STORED TO ENSURE THAT THEY WILL NOT COLLAPSE, RUPTURE OR STRUCTURALLY FAIL WHILE CONTINUING TO STORE WASTES.

THE SST INTEGRITY ASSESSMENT REPORT SHALL DOCUMENT INFORMATION GATHERED FOR THE SSTs TO MEET THE REQUIREMENTS OF 40 CFR SUBPART J, PART 265.191 (B), (1), (2), (3), (4), AND 5(I) AND (5)(II). THE PROCESS TO BE FOLLOWED FOR THIS ASSESSMENT WILL ALLOW FOR THE EVALUATION OF ALL 149 SSTs AGAINST CRITERIA SUCH AS: PAST THERMAL LOADS, RADIATION EXPOSURE, MECHANICAL STRESSES, AND CONSTRUCTION/OPERATING HISTORIES TO YIELD A SUBSET OF THE 149 SSTs TO BE EVALUATED IN DETAIL AGAINST THE REQUIREMENTS OF 40 CFR SUBPART J, PART 265.191(B) (1), (2), (3), (4), AND 5(I) AND (5)(II). THE SUBSET OF SSTs SELECTED BY THE ABOVE PROCESS WILL REPRESENT THE BOUNDING CONDITIONS FOR THE SSTs IN REGARDS TO DETERMINING IF THE SSTs WERE ADEQUATELY DESIGNED AND HAVE SUFFICIENT STRUCTURAL STRENGTH AND COMPATIBILITY WITH THE WASTES STORED TO ENSURE THAT THEY WILL NOT COLLAPSE, RUPTURE OR STRUCTURALLY FAIL. SHOULD THE INTEGRITY ASSESSMENT PERFORMED ON THIS SUBSET OF TANKS INDICATE THE SSTs ARE ADEQUATELY DESIGNED AND HAVE SUFFICIENT STRUCTURAL STRENGTH AND COMPATIBILITY WITH THE WASTES STORED, NO FURTHER ANALYSIS IS REQUIRED AS THIS REPRESENTS THE BOUNDING ANALYSIS. SHOULD THE INTEGRITY ASSESSMENT PERFORMED ON THIS SUBSET OF TANKS NOT RESULT IN A POSITIVE DECLARATION OF THE TANKS INTEGRITY FOR THIS BOUNDING CONDITION, ADDITIONAL SSTs MAY BE ASSESSED AGAINST THE REQUIREMENTS OF 40 CFR SUBPART J, PART 265.191 (B), (1), (2), (3), (4), AND 5(I) AND (5)(II).

A PANEL OF EXPERTS FROM OUTSIDE THE HANFORD TANK FARM CONTRACTORS EMPLOYED IN THE FIELDS OF STRUCTURAL ENGINEERING AND TANK SYSTEM DESIGN OR ASSESSMENTS WILL BE FORMED TO CONDUCT AN INDEPENDENT REVIEW OF THE INTEGRITY ASSESSMENT PROCESS AND RESULTS. MEMBERS WILL BE NATIONALLY RECOGNIZED EXPERTS FROM GOVERNMENT, INDUSTRY, AND ACADEMIA. AT LEAST SOME OF THE MEMBERS WILL BE AFFILIATED WITH THE AMERICAN CONCRETE INSTITUTE AND/OR THE AMERICAN SOCIETY OF CIVIL ENGINEERS. A REPORT FROM THE EXPERT PANEL WILL BE INCLUDED IN THE SST INTEGRITY ASSESSMENT REPORT.

THE ASSESSMENT SHALL DOCUMENT THE INFORMATION GATHERED FOR THE SST SYSTEMS, TO MEET THE REQUIREMENTS 40 CFR SUBPART J, PART 265.191(B) (1), (2), (3), (4), AND 5(I) AND (5)(II), INCLUDING THE FOLLOWING:

- A. 40 CFR 265.191 (b)(1) – DESIGN STANDARDS. TO THE EXTENT PRACTICAL PROVIDE: A DESCRIPTION OF THE MATERIALS USED IN CONSTRUCTION; CONSTRUCTION METHODS EMPLOYED; QUALITY CONTROL, AND TESTING PERFORMED ON MATERIALS AND THE FINAL STRUCTURE, PRIOR TO BEING PLACED IN SERVICE; ENGINEERING CODES REFERENCED FOR CONSTRUCTION; AND A PRESENTATION OF CALCULATIONS EMPLOYED TO DETERMINE EACH STRUCTURES DESIGN STRENGTH, AND USEFUL LIFE. AN EVALUATION OF THE DESIGN LIFE OF EACH SST SHALL BE DESCRIBED, BASED ON DATA GATHERED, WASTE

Description/Justification of Change (continued)

COMPATIBILITY WITH THE MATERIALS OF CONSTRUCTION, HISTORY OF CORROSION PROTECTION, OPERATIONAL HISTORY (INCLUDING ANY DOCUMENTED OR DETECTED LEAKS), SCHEMATICS DEPICTING THE LOCATION OF TANK BREACHES IF KNOWN, VISUAL EXAMINATIONS, AND ANY OTHER SOURCES OF TANK INTEGRITY ASSESSMENT INFORMATION GATHERED FOR EACH TANK.

- B. 40 CFR 265.191 (b)(2) – HAZARDOUS CHARACTERISTICS OF THE WASTES THAT HAVE BEEN HANDLED: A PRESENTATION DESCRIBING THE COMPATIBILITY OF THE WASTE STORED IN EACH TANK WITH THE TANK STRUCTURE AND MATERIALS. THIS PRESENTATION SHALL INCLUDE THE FOLLOWING TO THE EXTENT AVAILABLE IN HISTORIC DOCUMENTS: WASTE RADIO-CHEMICAL CHARACTERISTICS AND PROPERTIES SUCH AS CORROSIVITY, TEMPERATURE, HOMOGENEITY, ORGANIC CONTENT, SPECIFIC GRAVITY, GAS RETENTION AND GENERATION, FLAMMABILITY, AND A COMPARISON BETWEEN THE WASTE CURRENTLY STORED, TO THE DESIGN OPERATING SPECIFICATIONS FOR EACH TANK.
- C. 40 CFR 265.191 (b)(3) – EXISTING CORROSION PROTECTION MEASURES: A DESCRIPTION AND HISTORY TO THE EXTENT PRACTICAL BASED ON EXISTING INFORMATION OF CORROSION PROTECTION MEASURES EMPLOYED FOR EACH SST SINCE COMPLETION OF CONSTRUCTION.
- D. 40 CFR 265.191 (b)(4) – DOCUMENTED AGE OF THE TANK: THE AGE OF THE TANK SHALL BE DESCRIBED, INCLUDING THE COMPLETED CONSTRUCTION DATE, THE DATE PLACED IN SERVICE, THE DATE OF FIRST RECEIPT OF WASTE, THE DATE THE TANK WAS REMOVED FROM SERVICE OF RECEIVING WASTES, AND THE DATE THE TANK WAS INTERIM STABILIZED.
- E. 40 CFR 265.191 (b)(5) – RESULTS OF LEAK TEST(S), INTERNAL INSPECTION(S), OR OTHER TANK INTEGRITY EXAMINATIONS FOR EACH TANK INCLUDING;

A SUMMARY OF OBSERVATIONS AND CONCLUSIONS FROM ALL VISUAL EXAMINATIONS BY DIRECT OBSERVATION OR REMOTE CAMERA SURVEILLANCE, WITHIN EACH SST. VIDEOTAPES FROM REMOTE CAMERA SURVEILLANCE SHALL BE RETAINED IN THE FACILITY'S OPERATING RECORD AND SHALL BE AVAILABLE TO ECOLOGY ON REQUEST.

Description/Justification of Change (continued)

Change Number M-45-01-03	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date July 13, 2001																
Originator DOE-ORP		Phone																
Class of Change <input type="checkbox"/> I – Signatories <input type="checkbox"/> II – Executive Manager <input checked="" type="checkbox"/> III – Project Manager																		
Change Title Modification of text for Agreement target date M-45-06-T05.																		
Description/Justification of Change This modification is made in support of the parties M-23-01-01 agreement, and incorporates language modifying the scope of M-45-06-T05 target date to include a description and depiction of all components of the SST system.																		
Impact of Change Modification of the scope of the 2001 update of the (SST) tank farm closure/postclosure workplan update.																		
Affected Documents The Hanford Federal Facility Agreement and Consent Order, as amended, and Hanford site internal planning, management, and budget documents (e.g., Agreement Action Plan, Appendix D, DOE and DOE contractor Baselines, Baseline Change Control documents; Multi Year Work Plans; Project Management Plans; Tank Farm Closure/Post-Closure Workplan Update; and the Hanford site Integrated Priority List (IPL).																		
Approvals <table border="0" style="width: 100%;"> <tr> <td style="width: 45%; border-bottom: 1px solid black;">Ecology</td> <td style="width: 15%; border-bottom: 1px solid black;">Date</td> <td style="width: 15%; text-align: center;">_____ Approved</td> <td style="width: 25%; text-align: center;">_____ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;"><i>DC Bryson</i></td> <td style="border-bottom: 1px solid black;">7/13/01</td> <td style="text-align: center;">X Approved</td> <td style="text-align: center;">_____ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;">DOE</td> <td style="border-bottom: 1px solid black;">Date</td> <td style="text-align: center;">_____ Approved</td> <td style="text-align: center;">_____ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;">EPA</td> <td style="border-bottom: 1px solid black;">Date</td> <td style="text-align: center;">_____ Approved</td> <td style="text-align: center;">_____ Disapproved</td> </tr> </table>			Ecology	Date	_____ Approved	_____ Disapproved	<i>DC Bryson</i>	7/13/01	X Approved	_____ Disapproved	DOE	Date	_____ Approved	_____ Disapproved	EPA	Date	_____ Approved	_____ Disapproved
Ecology	Date	_____ Approved	_____ Disapproved															
<i>DC Bryson</i>	7/13/01	X Approved	_____ Disapproved															
DOE	Date	_____ Approved	_____ Disapproved															
EPA	Date	_____ Approved	_____ Disapproved															

Description/Justification of Change (continued)

M-45-06-T05 modifications incorporated into the HFFACO by approval of this Change Request are shown here as either shaded, or strikeout.

M-45-06-T05 SUBMIT TANK FARM CLOSURE/POST CLOSURE WORKPLAN UPDATE.

6/30/2002

BECAUSE OF THE UNCERTAINTIES IN THE CLOSURE PROCESS, THE WORK PLAN 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/POSTCLOSURE WORKPLAN UPDATE WILL BE SUBMITTED TO ECOLOGY AS A PRIMARY DOCUMENT.