U.S. Department of Energy
Office of River Protection
P.O. Box 450
Richland, Washington 99352

0057032

APR 2 4 2002

02-TOD-031

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

Dear Mr. Wilson:

SUBMISSION OF AN UPDATED PLAN FOR EXAMINATION OF DOUBLE-SHELL TANKS (DST) CONTAINED IN HANDFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (TRI-PARTY AGREEMENT) MILESTONE M-48 SERIES, M-48-05

Reference: ORP letter from C. E. Clark to M. A. Wilson, Ecology, "Transmittal of Reports Requested Under Administrative Orders No. 00NWPKW-1250 and No. 00NWPKW-1251, dated June 13, 2000," 00-OSD-108, dated September 18, 2000.

The U.S. Department of Energy, Office of River Protection (ORP) submits the attached updated plan for DST internal visual examinations required in Tri-Party Agreement M-48 Series, M-48-05 for the State of Washington Department of Ecology approval. The original visual examination plan was submitted in the above Reference.

The need for revising the current plan for DST visual inspection is the result of evaluating the information gained from performing assessments of visual degradation during primary tank intrusive work requiring the use of a video camera. ORP finds that the existing DST primary visual examinations lack a consistent methodology as follows:

- The present method of primary visual examinations has not resulted in a systematic visual baseline of all DSTs in order to compare results on a uniform and periodic basis.

- Primary tank intrusive work requiring use of a video camera (e.g., maintenance, equipment installation, etc.) is driven by other concerns, priorities, and schedules and is therefore not tied to systematic visual examination. As a result, these visual examinations are at best, spotty and incomplete, and are not performed on a periodic basis to properly assess visual degradation.

ORP is proposing to change the frequency and conditions for DST visual examinations by remote camera surveillance as follows:

- Visual examinations will be completed approximately every five years (not to exceed seven years), and will be performed in conjunction with the ten year periodic scheduled ultrasonic testing. Visual examinations will include inspection of the primary tank interior through one riser, and inspection of the annulus surfaces of both the primary and secondary tank walls, through four annulus risers to provide close to 360-degree coverage. Comprehensive and rigorous assessment of the primary tank walls will be documented in published reports. All work, including field activities, will be performed by DST Integrity Program personnel.

- Visual examinations will be performed when ultrasonic testing of the primary tank walls exhibit conditions or indications requiring additional assessments.

The advantages of revising the Visual Examination Program are:

- All visible DST primary and annulus surfaces will be periodically and systematically assessed. This method will provide a systematic visual baseline for both DST primary interior and annulus surfaces in which to assess any degradation. Quantitative assessment of tank wall areas by ultrasonic inspection can be used for comparison with, and in conjunction with, visual examinations. The regularity of these comprehensive visual inspections will be an integral part of the ORP DST Integrity Program to support waste retrieval, storage, and waste feed delivery to the Waste Treatment and Immobilization Plant complex.

- Consolidation of visual assessments by the DST Integrity Program will provide comprehensive examination, consistent quality, and completeness.

ORP recognized the need for performing and documenting visual examination of the DSTs with a five year periodicity. This methodology is consistent with achieving the high quality of visual assessments while maintaining smooth and efficient Tank Farms operations. Finally, this revised schedule of visual examinations is being implemented as a result of recommendations made by an Expert Panel of nationally recognized Tank Integrity Experts. This revised periodicity for visual inspections will serve as a good early detector of significant corrosion.

If you have any questions, please contact me, or your staff may contact Victor L. Callahan, Technical Operations Division, (509) 373-9880.

Sincerely,

James E. Rasmussen, Director
Environmental Management Division

TOD:VLC

Attachment

cc w/attach:
W. E. Bryan, CHG

cc w/o attach:
G. P. Duncan, CHG
F. R. Miera, CHG
R. Gay, CTUIR
D. Bartus, EPA c/o Ecology
J. Lyon, Ecology
R. F. Stanley, Ecology
J. Hertzel, FHI
O. Kramer, FHI
T. Martin, HAB
P. Sobotta, NPT
E. M. Mattlin, RL
R. Jim, YN
TPA Administrative Record w/attach

PLAN FOR DOUBLE-SHELL TANK INTERNAL VISUAL EXAMINATION
Revision 1

1.0 PURPOSE

Visual examinations of the Double-Shell Tanks (DSTs) are to be performed to assess visible degradation of exposed surfaces of the primary tank interior and tank annulus regions.

2.0 SCOPE

DSTs will be visually examined for conditions in both the interior of the primary tank, and the annulus surfaces of the primary and secondary tanks, using remote video equipment during planned periodic visual inspections. The revised approach for conducting visual examinations of DSTs is to complete the video examination of each tank's interior and annulus regions approximately every 5 years (not to exceed 7 years), and will be performed in conjunction with the 10 year periodic scheduled ultrasonic testing.

The primary tank's interior visual examination will be performed via access through one of the primary tank's risers; visual examination of the annulus surfaces of both primary and secondary tank walls will be performed through four (4) annulus risers located so that a near 360-degree visual examination is conducted. The assessment reports from these visual examinations will document tank wall conditions and suspected visual degradation of wall surfaces.

3.0 CONDITIONS FOR EXAMINATION

Visual examinations will be conducted under the following conditions:

- Visual examinations will be completed approximately every 5 years (not to exceed 7 years), and will be performed in conjunction with the 10 year periodic scheduled ultrasonic testing,
- Visual examinations will be performed when ultrasonic testing of the primary tank walls exhibit conditions or indications requiring additional assessments,
- The primary tank interior will be visually inspected following complete pump-down of the tank, to view previously inaccessible surfaces that have not been documented for at least 5 years.

4.0 EQUIPMENT SPECIFICATIONS

Cameras used for visual examination shall be the best available video equipment used in remote field applications in the tank farms.

To use installed camera equipment, the cameras should have the capability to perform ASME XI VT-3 examinations.

5.0 PERSONNEL QUALIFICATION

The organization responsible for operating the video camera equipment shall be field crew, within the DST Integrity Program.

The person directing the examination shall be the designated Independent Qualified Registered Professional Engineer (IQRPE), an individual designated by the IQRPE, or prior to appointment of the IQRPE, an individual who is a subject matter expert in the area of corrosion, structural integrity, or Level III NDE and designated in writing by the Double-Shell Tank Integrity Project Manager.

6.0 EXTENT OF EXAMINATION

The visual examination of the primary tank interior must include the maximum area visible within the capability of the camera system being used. The visual examination shall look at the vertical wall surface, tank bottoms, if exposed, tank waste/vapor interface areas, and the dome structure. The visual examination of the tank annulus side surface must be performed via four of the secondary tank's risers located so that a near 360-degree visual examination is conducted. The annulus side visual examination will include the primary tank wall (including viewable areas of the lower knuckle and upper haunch areas), the secondary tank wall and floor (including viewable areas of the upper haunch region and the tank dome intersection),and side wall penetrations (if present). A general examination to the level of detail for a VT-3 examination is required. Further examination, or magnification is at the discretion of the person directing the examination.

7.0 ACCEPTANCE CRITERIA

Using the installed camera, the inspected area shall be examined for evidence of cracking, discoloration, wear, pitting, excessive corrosion, gouges, surface discontinuities, dents and other signs of surface irregularities and evaluated in accordance with ASME standard VT-3.

8.0 REPORTING

All examinations will be made available to Ecology upon request within sixty (60) days of completion of each visual examination. The results of the examination shall be documented and released as a supporting document for each tank or group of tanks. The report shall include a discussion of the results, areas of interest, recommendations and conclusions of the examination. Any obvious indication of problems shall within 24 hours be brought to the attention of the Double-Shell Tank Integrity Project Manager for reporting to CHG management and ORP, as required.

Should the results indicate a significant indication(s), a panel of experts shall be convened to evaluate the indications, assess probable cause and implications, and provide written recommendations for corrective action and/or gathering of additional information. This panel shall consist of CHG personnel and, where appropriate, CHG contract personnel. The report prepared by the panel shall serve as a basis for development of an action plan, if required, by appropriate levels of CHG management.

9.0 RECORDS MANAGEMENT

The video records shall be stored for a minimum of ten years. Prior to discarding video records, an assessment will be made to determine the need to maintain them for a longer period. The video data will be stored in the Tank Characterization and Safety Resource Center (TCSRC). The TCSRC is presently located in Building 2750E in the 200 East Area of the Hanford Site. The video records shall be clearly marked, identified and

indexed with respect to contents, dates and times. Original data sheets from any such examinations must be included in the documents retained for record-keeping.

10.0 PROMULGATION OF REQUIREMENTS

Within sixty days after approval of this revised plan, these requirements will be incorporated in a revision to the Environmental Operating Specification Document (EOSD).