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RELEASE AUTHORIZATION

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This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

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(Signature)

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ENGINEERING DATA TRANSMITTAL

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5. Key Words Records Holding Area Quality Assurance Records	6. Author Name: J. Harris <i>J. Harris</i> 9/30/94 Signature Organization/Charge Code 7E650/N131T	
7. Abstract <p>This data management plan (DMP) describes the data produced by the ultrasonic inspections and how and where the data are to be stored.</p>		
8. PURPOSE AND USE OF DOCUMENT - This document was prepared for use within the U.S. Department of Energy and its contractors. It is to be used only to perform, direct, or integrate work under U.S. Department of Energy contracts. This document is not approved for public release until reviewed. PATENT STATUS - This document copy, since it is transmitted in advance of patent clearance, is made available in confidence solely for use in performance of work under contracts with the U.S. Department of Energy. This document is not to be published nor its contents otherwise disseminated or used for purposes other than specified above before patent approval for such release or use has been secured, upon request, from the Patent Counsel, U.S. Department of Energy Field Office, Richland, WA. DISCLAIMER - This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.	10. RELEASE STAMP <div data-bbox="1040 1394 1500 1646" style="border: 1px solid black; padding: 5px;"><p>OFFICIAL RELEASE BY WHC DATE SEP 30 1994 <i>Sta. 21</i></p></div>	
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DATA MANAGEMENT PLAN FOR THE ULTRASONIC INSPECTION OF THE DOUBLE-SHELL TANKS

1.0 INTRODUCTION

To obtain an operating permit from Washington State Department of Ecology, Westinghouse Hanford Company (WHC) must assess the double-shell tanks (DST) for structural integrity. The assessment includes volumetric examinations of the primary steel tank and secondary steel liner. A significant amount of data will be collected and reported during these examinations. This data management plan (DMP) describes the data produced by the examinations and how and where the data are to be stored.

The reliability of the data is not within the scope of this plan. That scope is included in the *DST Ultrasonic Inspection Plan* (WHC 1994) and the *DST Ultrasonic Inspection Program Quality Assurance and Configuration Management Plan* (WHC 1994a).

2.0 BACKGROUND

The integrity of the tanks will be assessed by remote ultrasonic (UT) inspections of the primary and secondary steel tanks to measure wall thickness and detect corrosion pitting and stress corrosion cracking. The surfaces of the areas to be inspected will be cleaned with a power wire brush to remove loose mill scale, rust, and other materials that could inhibit proper coupling of the UT probe. To ensure that the cleaning process is satisfactory, the cleaned area will be viewed with a video camera and recorded. The video and UT equipment will be calibrated to ensure accuracy, and a performance test will be conducted to verify its capabilities. The tank inspection sequence consists of cleaning, visual examination, and UT inspection of each region selected for inspection: the primary tank wall, the tank bottom and lower knuckle, and the secondary tank wall.

3.0 DATA QUALITY

The performance specification describes the capabilities of the UT and visual systems (WHC 1993). It provides detailed requirements for sizing defects and viewing the tank surface. A performance test will document the capability of the inspection system to meet these requirements before tank inspections.

To demonstrate the data collected during inspections are accurate, the permanent tank inspection record will include the equipment calibrations that are performed at regular intervals during the inspections.

Important data collected during the performance test and the tank inspection will be stored for comparison with future inspection results. These data will be stored on magnetic tape, optical disk, or paper.

4.0 DATA PLAN AND REQUIREMENTS

4.1 DATA DESCRIPTION

All data managed by this plan are categorized into one of three groups. The category determines the retention period and storage control measures as summarized in Table 1. A description of the data is provided in Appendix A.

- **Category 1:**

Calibration, test, and inspection data that document the quality and results of the inspections. These data will be maintained and managed throughout the life of the existing tank system (28 tanks).

- **Category 2:**

Non-critical data or derivatives of category 1 data that are temporarily stored and facilitate evaluation of category 1 data. All data gathered during the visual examination and UT inspection processes will be controlled from the time they are obtained until the tank inspection report is issued and all category 1 data is properly stored.

- **Category 3:**

Miscellaneous data generated to demonstrate control of administrative matters. All miscellaneous data will be controlled as prescribed by procedures generated by the project manager.

4.2 ORGANIZATION RESPONSIBILITIES

4.2.1 Contractor

During the first inspection of the tanks, the inspection contractor shall be responsible for the collection, control, and maintenance of all data until they are formally turned over to WHC. The temporary storage and control of in-process records shall be in accordance with approved procedures. A procedure written by the contractor and approved by WHC shall provide the necessary controls until the records are turned over to WHC.

4.2.2 Westinghouse Hanford Company (WHC)

Technical Data Service Centers (TDSC) is the file custodian and is responsible for control and protection of all in-process data until they are transmitted to Information Resource Management (IRM) for control and management. A procedure written by WHC shall control and protect the records until they are transmitted to IRM for final storage.

4.2.3 Information Resource Management (IRM)

IRM shall provide a suitable storage facility for the data controlled by this plan. On transmittal to the IRM facility, IRM shall receive, index, store, maintain, retrieve, and control all data according to WHC-CM-3-5.

Table 1. Summary of Data Storage Requirements.

Name of Data	Data Type	Where Stored	How Long Stored
Category 1			
Instrument calibration certification	document	IRM storage facility or the federal records center in Seattle	Service lifetime of tank system
Calibration block certification	document		
Visual/UT calibration report	document		
Performance test report	document		
Visual examination	optical disk		
UT calibration & inspection diskettes	optical disk		
Tank report	document		
Category 2			
Visual/UT operator log	document	1 hour fire proof cabinet in the inspection trailer	Until tank report is issued
Daily reports	document		
UT data integrity verification document	document		
Suspect area document	document		
UT calibration	floppy disk		
Visual examinations	S-VHS video tape		
UT inspection	floppy disk		
Category 3			
Issue/resolution memorandums	document	No requirement	No requirement
Proposed resolutions	document		
Approvals and rejections	document		
Revised project documents	dwgs or doc.		
Letters	document		

4.3 FINAL STORAGE

All category 1 data are quality assurance records and will be stored in a data storage facility in accordance with *Document Control and Records Management Manual*, WHC-CM-3-5. These data shall be retrievable within 10 working days following a request.

The facility that houses optical disks will provide an environment which assures that the disks will have a life expectancy at least equal to the service life of the tank system. The disks will be stored to prevent warpage or other deleterious effects which could jeopardize the quality or readability of the data. Typical manufacturers data (3M Co.) indicate that optical disk life of greater than 30 years can be achieved when storage conditions are within -10 to 50 degrees C and 10 to 90% relative humidity.

In the unlikely event that the inspection of a tank is interrupted for a period longer than 30 days, a report will be issued on the partial inspection and category 1 data will be transmitted to IRM for storage.

5.0 REFERENCES

WHC, 1993, *Double-Shell Tank Ultrasonic Inspection Performance Specification*, WHC-S-4108, Rev. 1-A, Westinghouse Hanford Company, Richland, Washington.

WHC, 1994, *Double-Shell Tank Ultrasonic Inspection Plan*, WHC-SD-WM-AP-019, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

WHC, 1994a, *Double-Shell Tank Ultrasonic Inspection Program Quality Assurance and Configuration Management Plan*, WHC-SD-WM-QAPP-024, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WHC-CM-3-5, *Document Control and Records Management Manual*, Westinghouse Hanford Company, Richland, Washington.

Appendix - Descriptions of Data.

INSPECTION GENERATED DATA:

Instrument calibration CERTIFICATION:

All of the instruments used to monitor or otherwise cause an adjustment or setting to be made to equipment will themselves be calibrated. This calibration shall be performed annually and be traceable to recognized standards of the National Bureau of Standards. Instruments thus calibrated shall have a "calibration tag" attached to the equipment that bears data signifying when such calibration last took place and when the next calibration is due. Documentation attesting to the facts concerning the calibration and the traceability of such shall be provided for each instrument.

Calibration Block CERTIFICATION:

The calibration blocks or standards used to calibrate the UT equipment shall be manufactured with tools and equipment traceable to recognized standards of the National Bureau of Standards. Documentation attesting to the facts concerning the calibration and traceability of such shall be provided.

Visual/UT Calibration REPORT:

Before the performance test of the visual examination and UT inspection systems, before and after the inspection of each tank, or every 12 hours of operation, the visual and UT equipment will be calibrated. This calibration will be conducted in accordance with an approved procedure and documented in a calibration report.

Performance Test REPORT:

The performance test is required to demonstrate that the system equipment, operating procedures, and data analysis procedures perform to the final performance specification. Performance test requirements include the following:

- WHC written and approved Performance test plan
- WHC approved operating procedure
- WHC approved data analysis procedure
- Completed inspection system
- Certified UT standards
- WHC provided test mockup
- Qualified and certified operators
- WHC approved performance test report.

UT INSPECTION DISKETTE AND OPTICAL DISK:

The ultrasonic signals generated during the UT inspection will be viewed in real time by the UT operator on a cathode ray tube (CRT) and the data are recorded on 3.5-in. diskettes in MS-DOS format. At the conclusion of the inspection of each tank, this information will be duplicated onto optical disk.

Tank REPORT:

At the conclusion of the inspection of each tank, a report will be generated for that tank. This report will include all relevant information and data generated during the course of inspection for that tank.

UT Data integrity VERIFICATION DOCUMENT:

After all of the available storage capacity on a data diskette has been used, the data immediately will be transferred to the back-up storage device(optical disk). During this transfer, all files will be checked for integrity and verified. This verification activity will be documented by the operator, who will print a hard copy of the directory and sign it.

Visual examination VIDEO TAPE and OPTICAL DISK:

The visual examination will be recorded on video tape. Each frame of the video will have overlaid on it the tank number, date, time, riser number and navigation coordinate. Selected information on the video tape will be transferred to optical disk. The optical disk provides a more stable configuration for permanent storage.

Visual Examination Operator LOG:

During the visual examination activity, the UT/visual operator will keep a log of observations. This log will be hand written during the real time viewing of the video images on the CRT screen, and subsequently entered into a computer and a hard copy produced. Accordingly this log will exist in 3 formats namely hand written, electronically stored data, and computer printout hard copy.

UT Operator LOG:

During the UT inspection, the UT operator will keep a log of data and information relative to the observations made. This log will be hand written during the real time viewing of the video images on the CRT screen, then entered into a computer, and a hard copy produced. Accordingly this log will exist in three formats: hand written, electronic stored data, and computer printout hard copy.

Daily REPORT:

At the end of each day of inspection, a report will be generated that recounts the events occurring during that day.

Suspect area DOCUMENT:

During the visual examination, areas that exhibit indications considered worthy of evaluation will be identified by location on the daily log. At a later time, off line, these indications will be evaluated during a viewing of the video tape. The findings of this evaluation will be documented in the daily reports and the Tank Report.

ISSUE AND ISSUE RESOLUTION DOCUMENTS:

All documents used to address or resolve issues of any kind shall be controlled and maintained as data. These documents shall include memoranda, proposed resolutions, approvals and rejections, revised project documents, and letters. Control of these documents will be at the discretion of the project manager. Issues that result in changes to the vendor's contract will be controlled and maintained by Procurement.