

SEP 25 1998

ENGINEERING DATA TRANSMITTAL

Page 1 of 1  
1. EDT 625007

2. To: (Receiving Organization) Distribution		3. From: (Originating Organization) Remote Equipment Engineering		4. Related EDT No.: N/A	
5. Proj./Prog./Dept./Div.: DST System Integrity Assessment TWRS Life Extension Program		6. Design Authority/ Design Agent/Cog. Engr.: RS Nicholson		7. Purchase Order No.: N/A	
8. Originator Remarks: Document satisfies TWRS FY 98 Performance Agreement: TWR 1.2.13				9. Equip./Component No.: N/A	
				10. System/Bldg./Facility: 241 Tank Farms	
11. Receiver Remarks: 11A. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				12. Major Assm. Dwg. No.: N/A	
				13. Permit/Permit Application No.: N/A	
				14. Required Response Date: 9/17/98	

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	HNF-3353	N/A	0	Results of Tank 241-AN-107 Ultrasonic Examination	E	I	2	2

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION  
(See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
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1	1	GA Leshikar	<i>[Signature]</i>	9/16/98	S0-08	1	1	GJ Posakony	<i>[Signature]</i>	9/22/98	S5-05
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# Results of Tank 241-AN-107 Ultrasonic Examination

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U.S. Department of Energy Contract DE-AC06-87RL10930

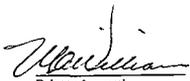
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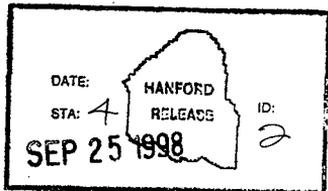
Key Words: ultrasonic, tank integrity, examination, 241-AN-107, 107-AN, inspection, wall thinning, UT testing, tank wall, UT, integrity assessment

Abstract: A tank examination supplier was retained to provide and use an ultrasonic examination system (equipment, procedures, and inspectors) to examine a limited area of Tank 241-AN-107 primary tank wall. The exam found no indications of wall thinning, pits, or cracks in excess of the acceptance criteria.

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## **Double-Shell Tank System Integrity Assessment: Results of Tank 241-AN-107 Ultrasonic Examination**

### **1.0 INTRODUCTION**

In May 1996, the TWRS Decision Board recommended and RL agreed that the condition of the double-shell tanks (DSTs) should be determined by ultrasonic (UT) inspection of a limited area in six of the 28 DSTs. The Washington State Department of Ecology (WDOE) has agreed with the strategy of limited ultrasonic inspection of six DSTs. Data collected during the UT inspections will be used to assess the condition of the tank, judge the effects of past corrosion control practices, and satisfy a regulatory requirement to periodically assess the integrity of waste tanks.

In November, 1996, the primary and secondary wall of DST 241-AW-103 was remotely examined to determine if Hanford DST walls could be inspected without removing the existing surface rust and scale. The successful completion of this inspection met the requirements of RL milestone T21-97-455 and represented the first ultrasonic inspection of a Hanford DST (Leshkar 1997).

Based on the results of the initial inspection, a Statement Of Work (SOW) was prepared for the remaining DST inspections scheduled for fiscal year 1998 and beyond. DST 241-AN-107 was selected to be inspected next based on selection criteria given in (Schwenk and Scott 1996) and (Anantamula 1997). The service of COGEMA Engineering Corporation (COGEMA) was retained to provide an ultrasonic examination system (equipment, procedures, and inspectors) and to perform the inspection.

### **2.0 OBJECTIVE / SCOPE**

This report presents results of the UT examination of DST 241-AN-107 with particular attention paid to the primary wall base metal and welds. Issuance of this report meets FY 98 Performance Agreement TWR 1.2.13, due 9/30/98.

The criteria, deliverables, and responsibilities for the UT examination are described in HNF-2820, Rev. 0, *Engineering Task Plan for the Ultrasonic Inspection of Hanford Double-Shell Tanks*, (Pfluger 1998).

### 3.0 PERFORMANCE DEMONSTRATION TESTS

Prior to use in the field, COGEMA's ultrasonic examination system was required to satisfactorily complete a performance demonstration test (PDT) testing its ability to detect and size wall thinning, pits, and cracks in a series of test plates with artificial and natural defects. Appendix A presents details and results of the PDT. COGEMA also successfully demonstrated the deployment and retrieval of the equipment on a tank mock-up.

### 4.0 ULTRASONIC EXAMINATION DESCRIPTION

The tank inspection was performed under JCS work package 2E-98-01125/W during July 1998. All work steps, guidelines, procedures, personnel responsibilities, and protocol for the inspection (Pfluger 1998) were included in the subject work package.

A remotely controlled, steerable crawler was used to deliver the ultrasonic sensors to the tank wall. The crawler was deployed through 24 inch annulus inspection riser number AN107-WSTA-RISER-026. The crawler attaches to the tank wall with two pairs of magnetic wheels. A traveling bridge on the crawler is outfitted with ultrasonic sensors. As the crawler moves slowly forward, the sensors glide from side-to-side over the inspection surface. Water couplant is continuously fed to each transducer at a rate needed to attain an acceptable signal. For examination of the wall, one dual element 0° transducer and two 45° shear wave transducers were used. To detect cracks perpendicular to welds, two opposing 45° shear wave transducers were directed parallel to the weld. To detect cracks parallel to the weld, a 60° shear wave transducer was directed towards the weld and a dual element 0° transducer was also included. Welds were examined from both sides.

Data and images were returned to a manned control trailer located just outside the AN farm fence which contains the crawler controls, video monitors, and data collection and evaluation software/hardware. The signals were continuously monitored by the inspector for reportable indications. The entire examination was viewed by a camera and lighting deployed in an adjacent 4 inch riser. The inspection was recorded on videotape.

### 5.0 GENERAL REQUIREMENTS AND INSPECTION CRITERIA

FY 98 Performance Agreement TWR 1.2.13 is stated below:

“The contractor shall perform an ultrasonic examination of one double-shell tank primary wall to the extent described in WHC-SD-WM-AP-017, “Tank System Integrity

Assessments Program Plan”, Revision 1, and submit a report to RL by September 30, 1998. The report shall include a discussion of findings and conclusions based upon the data obtained from the ultrasonic examination.”

To satisfy the performance agreement, areas to be examined on the primary tank were identified in the SOW as:

1. A vertical strip approximately 30 inches wide by 35 feet long. The vertical strip may be comprised of one or more strips whose total width is 30 inches. (The distance from the tank upper haunch transition to the lower knuckle is approximately 35 feet).
2. Twenty feet of the cylinder-to-lower knuckle weld.
3. One vertical weld joining the lowest shell course plates (approximately 10 feet).
4. One vertical weld joining the next to the lowest shell course plates (approximately 10 feet).

COGEMA was required to report wall thinning that exceeds 10% of the plate thickness, pits that exceed 25% of the wall thickness, and stress corrosion cracks on the inside wall of the primary tank that exceeded 0.18 inches in depth (Pfluger 1998).

## 6.0 RESULTS

The Inspection Data Sheets and an interpretation of the data by COGEMA Engineering's Level III qualified inspector are included in the Inspection Report which forms Appendix B. Results are summarized below:

### Wall Thinning :

- None of the areas scanned showed any reportable wall thinning. As would be expected, the wall thicknesses varied from plate to plate and within the same plate. One small section in Plate #1 showed a small increase in plate thickness which might be related to an area where a weld attachment had been made during the construction of the tank.

### Corrosion Pitting:

- No reportable pitting was detected in the side wall or weld areas that were scanned.

#### Cracks in Tank Side Wall and Weld Regions:

No cracks were detected in the side wall or the vertical or circumferential welds that were scanned during the examination.

Pacific Northwest National Laboratory UT examination experts independently evaluated the hard copy scans and Inspection Report data and concurred with the COGEMA interpretation (Appendix A).

## 7.0 EVALUATION OF THE RESULTS

Tank AN-107 began receiving waste in 1983 and is currently a concentrated complexant receiver tank. The tank level is currently 381.1 inches, of which 90 inches is solids (Hanlon 1998). The waste temperature from 1983 to present has not exceeded 110°F and is currently approximately 85°F.

Tank AN-107 was selected as one in the sample of six tanks that are to represent the whole 28-tank population. Although the tanks are expected to have similar performance, the selection of tanks is purposely biased towards tanks whose primary tanks may be more likely to be degraded by corrosion. The tank selection criteria (Schwenk and Scott, 1996) considered variables that may influence corrosion such as waste physical characteristics, waste chemistry, temperature, and age. Tank AN-107 was chosen because its waste chemistry does not meet the tank farm composition operating specification for hydroxide ion concentration ( $\text{OH}^- < 0.3 \text{ M}$ ). Its current waste chemistry may encourage stress corrosion cracking (SCC).

Tank AN-107's low hydroxide ion condition was discovered after analytical results from samples taken in November 1984 were reported in February 1985 (Bratzel 1985). Other samples taken since 1986 have confirmed the low  $\text{OH}^-$  condition and shown its concentration to have declined over the years. In recently analyzed samples (Esch 1997), the  $\text{OH}^-$  level was not measurable.

The phenomena of stress corrosion cracking is dependent on many factors including waste chemistry, material selection, incubation time, stress intensity, temperature, and whether or not fabrication stress relief was performed. There is large amount of uncertainty in predicting the onset of SCC. Investigations of leaking tanks at Savannah River Project (SRP) show that the severity of SCC, at least as evidenced by tank leakage, varies markedly from tank to tank (Donovan 1977). The SRP observations suggest that examinations need to cover a large portion of the tank weld area to have a good probability of detecting the first (or nearly first) crack or leak. Limited area inspections are useful for detecting globally occurring phenomena and cannot guarantee that tank

degradation is not occurring elsewhere on the tank. Understanding the role of SCC in tank leaks at SRP led to the application of postfabrication heat treatment to the primary liner of the Hanford DSTs.

The results of the Tank AN-107 limited area UT examination showed no significant wall thinning, pitting, or cracks. In Figure 1, the history of waste level is matched with the primary tank wall thickness measurements from the Inspection Data Sheets. Each wall thickness measurement plotted on the figure is the average of all data collected over a 1 foot long by 15" wide scan area. Areas of interest are the vapor space above the waste, the liquid-vapor interface, the liquid region, the liquid-solids interface, and the solids region. The measured wall thickness shows variation within the original plate tolerance (ASTM A20-95) with no indication of thinning at a particular elevation.

Based on visual observations the secondary tank liner appears to be uniformly corroding from the inside. The tank condition is similar to that observed during earlier visual inspections of Tank AN-107.

Since there were no significant changes in the wall thickness and no cracks were detected at any location, corrosion due to suspected mechanisms is probably not occurring to a significant degree. However, uncertainty on conditions that lead to corrosion degradation, particularly stress corrosion cracking, suggests additional data on other tanks is needed to gain confidence that this result can be applied to the general tank population.

## 7.0 REFERENCES

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Schwenk, E.B., and Scott, K.V., 1996, *Description of Double-Shell Tank Selection Criteria for Inspection*, WHC-SD-WM-ER-529, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

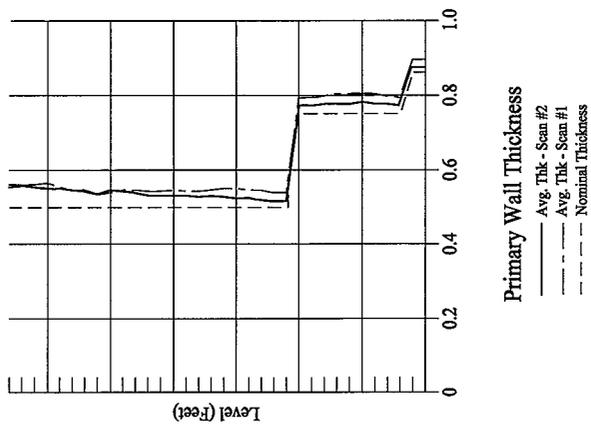
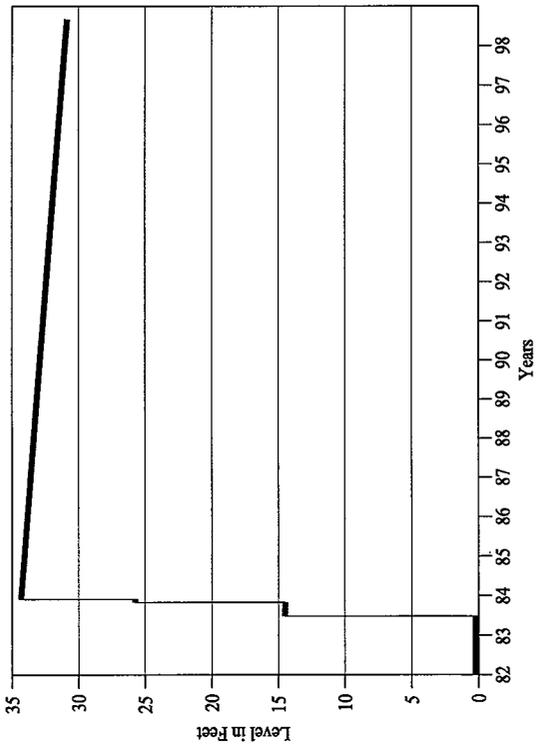


Figure 1 - Comparison of As-Measured and ASTM-Specified Plate Thickness with Waste Level, DST 241-AN-107

**Appendix A**

**Evaluation of PDT and Examination Results of Tank 241-AN-107**

Report Prepared

By

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August 19, 1998

## Evaluation of PDT and Examination Results of Tank 241-AN-107

### 1.0 Introduction

COGEMA Engineering Corporation (COGEMA) was the successful bidder on the Lockheed Martin Hanford Corporation (LMHC) "Solicitation Request for Double-Shell Tank Ultrasonic Examination," 98-BHB-008, dated February 19, 1998. The Statement of Work (SOW) under this solicitation called for the ultrasonic examination of selected portions of the double-shell Tank 241-AN-107 located in the 200E Area of the Hanford Complex. The SOW included requirements to perform an ultrasonic examination of the primary tank wall, to detect and characterize the depth of any erosion (wall thinning), pit corrosion, cracks or other anomalies that might be present. The SOW also required that the successful bidder was to satisfactorily complete a performance demonstration test (PDT) to qualify their ultrasonic system (equipment, procedure and personnel) prior to initiating the field examination of Tank 241-AN-107.

This technical report on the ultrasonic examination of Tank 241-AN-107 describes the examination criteria, results of the performance demonstration tests (PDT) and the results of the examination of selected portions the tank wall and the heat affected zones of vertical and horizontal welds of the primary tank.

### 2.0 General Requirements

The SOW outlined requirements for detecting and characterizing general wall thinning, corrosion pitting and cracks. The goal for the ultrasonic inspection was to characterize and record pits with depths that exceeded 25% of the wall thickness, wall thinning that exceeded 10% of the plate thickness, and stress corrosion cracks on the inside wall of the primary tank that exceeded 0.187 inches in depth. The thickness of the primary tank wall ranged from 0.50 to 0.875 inches. The accuracy for depth measurements for the three different types of defects was defined as follows:

- a. Wall thinning - - measure thickness within +/- 0.02 inches
- b. Pits - - size depths within +/- 0.05 inches
- c. Cracks - - size the depths of cracks on the inner wall surfaces within +/- 0.10 inches
- d. Location - - locate all reportable indications within +/- 1.0 inches.

The procedure for the ultrasonic examination of the Tank 241-AN-107 was to be based on the Section V, Article 4 Code defined by the American Society for Mechanical Engineers (ASME). To establish that the ultrasonic system is capable of meeting the accuracy requirements, a performance demonstration test (PDT) involving a series of test plates with artificial and natural defects was to be completed prior to the examination of Tank 241-AN-107. LMHC has the responsibility for providing the test plates that are to be used for the PDT. These special test plates were fabricated by Pacific Northwest National Laboratory (PNNL) for the PDT.

The ultrasonic test procedures for performing the examinations were to be submitted and approved by LMHC prior to performance of the PDT. Qualification of the ultrasonic system was based on the satisfactory completion of the PDT. Personnel participating in the examinations were to be certified in accordance with American Society for Nondestructive Testing (ASNT) guideline SNT –TC-1A-92.

### 3.0 Plan for Ultrasonic Examinations

To summarize, in COGEMA's approach for the ultrasonic examinations associated with the PDT and Tank 241-AN-107, it chose Swain Distributing, Inc. (Swain) as the subcontractor for the performing these inspections. Swain has extensive experience in nondestructive testing and has performed many tank examinations in environments such as those that would be encountered in Tank 241-AN-107. Swain developed the test procedures for COGEMA that were proposed for the examinations. Swain proposed the use of the P-Scan ultrasonic test equipment and the AWS-5 remote-controlled magnetic wheel crawler, manufactured by Force Institute in Denmark, for both the PDT and tank examinations. These are the same systems that were used by Swain and their personnel for the 1996 ultrasonic examination of the tank wall in Tank 241-AW-103.

LMHC contracted with PNNL for the development of the test plan for the PDT, review of proposed procedures, analysis of results of the PDT data and for evaluating the results recorded during the examination of selected portions of Tank 241-107-AN.

### 4.0 Performance Demonstration Tests

As defined in the SOW, the personnel participating in the examinations were to be certified in accordance with ASNT's SNT-TC-1A-92 guidelines. The test procedures were to receive prior approval by LMHC, and a demonstration of the capability of the ultrasonic equipment had to be completed in order to qualify the "system" for examinations in Tank 241-AN-107.

**Personnel Qualification** - - Mr. Wesley Nelson, ASNT Certified Level III in ultrasonics, was identified as COGEMA's UT Level III authority for this project. Mr. Nelson provided the work record and certifications for the Swain personnel, Mr. James Elder and Mr. Ronald V. Swain of Swain Distribution. The documentation of these persons established that they met all requirements set forth in the SOW. The Swain personnel had specific training in the depth sizing of stress corrosion cracks.

**Test Procedures** - - The test procedures defined the use of both straight beam and angle beam transducers that were to be used for the examination of the sections of the side wall and weld areas of the primary tank. The procedures included full documentation on methods for calibration and reporting. Hard copy of the T-Scan (thickness) and P-Scan (projection or angle beam) views of all areas scanned were to be made available for interpretation and analysis. A review of the procedures noted a variance in the areas in and around the welds that were to be examined. This portion of the procedure was modified and approved for side wall and weld examinations.

**Performance Demonstration Tests** - - The plan for the performance demonstration tests (PDT) developed by PNNL followed, as its guideline, the procedure described in Section XI, Appendix VIII of

the American Society for Mechanical Engineers "Boiler and Pressure Vessel Code." As outlined in this Appendix, a grid pattern is marked on each of the test plates and each square in the grid is identified as a "flaw grading unit or a "blank grading unit". The characterization of the grading units forms the basis for establishing the probability of detection (POD) and false call ratio as well as the sizing accuracy of the ultrasonic inspection system.

A total of 12 test plates were used in the PDT. These plates contained 35 defects characterized as simulated pits (round bottomed holes), wall thinning and laboratory grown stress corrosion cracks. To provide values for the POD and sizing accuracy, PNNL analyzed the data sheets and the hard copy reports provided by the COGEMA/Swain team with the actual or "true state" of the defects in the plates. This analysis was used to as the basis for acceptance/rejection of the ultrasonic system (equipment, procedure and personnel) in terms of POD, false calls and correct calls and the RMS value of the correct calls.

## 5.0 Results of the Performance Demonstration Tests

The PDT was performed on a mock-up that was assembled in the 306E building. The mock-up was designed for the plates to be installed in a cutout in the side wall of the mockup. The magnetic wheel crawler containing the ultrasonic search units (transducers) was attached to the tank wall and maneuvered to scan the plates. The results of the PDT are separated into three areas: namely, measurement of wall thinning, depth of pits and through wall dimension of cracks. Prior to the PDT, PNNL staff characterized all defects in the test plates. They used both ultrasonic and physical measurements to establish what is referred to as the "true state" measurement. Hard copy records and report data provided by the Swain and COGEMA analysts was compared with the "true state" and these data were used as the basis for qualifying the ultrasonic system. All defects were detected and correctly classified and there were no false calls, consequently the POD for the PDT was 100%.

**Wall thinning** - - Figure 5.1 describes the PDT results reported for wall thinning. All conditions were detected and properly classified. The specification defined an accuracy requirement of +/- 0.020 inches. The analysis of test results established that wall thinning was characterized to an RMS value of 0.006 inches - well within the required accuracy.

**Pitting** - - Figure 5.2 describes the PDT results reported for characterizing of simulated pits. All pits were detected and properly classified. The specification defined the accuracy requirements for measurement of depth of pits as +/- 0.05 inches. The analysis of the test results provided by the hard copy and data records established that pit depth measurements had a value of 0.0435 inches. This is within the required accuracy.

**Cracks** - - Figure 5.3 describes the PDT results reported for cracks that might be present in the parent material in the side wall of the tank. All cracks in the test series were detected and accurately classified as cracks. The specification defined the accuracy requirements for through wall measurement of stress corrosion cracks at +/- 0.10 inches. The analysis of the test results from the hard copy and the data reports established the RMS value for crack depth measurement at 0.094 inches. This is within the required measurement accuracy.

NOTE: The plots shown in Figures 5.1, 5.2, 5.3 and 5.5 are designed to describe the flaw depths as characterized by PNNL staff ("True State")(dots and line) versus the measured values provided by the COGEMA/Swain team (triangles)

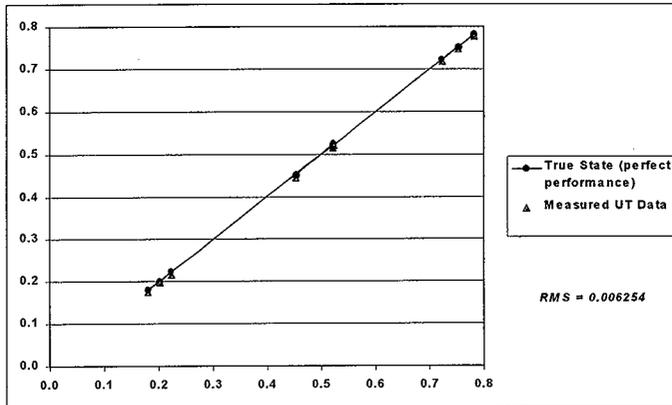


Figure 5.1 Measurement of Tank Wall Thinning

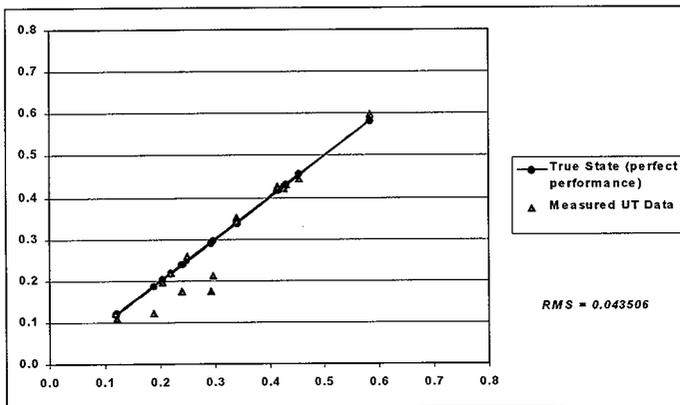


Figure 5.2 Measurement of Depth of Simulated Pits

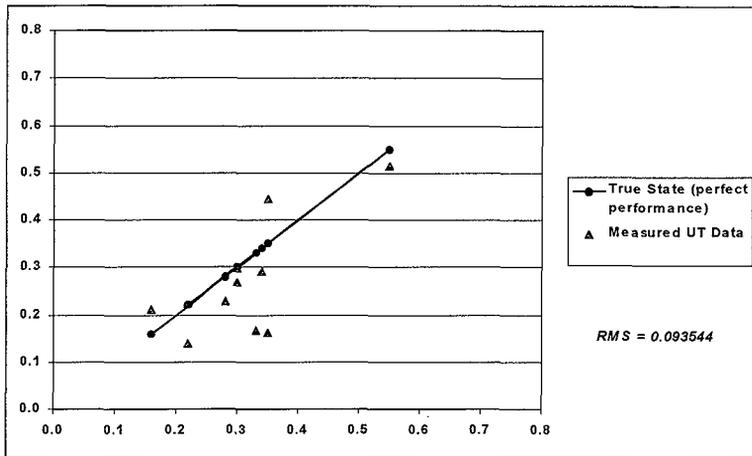
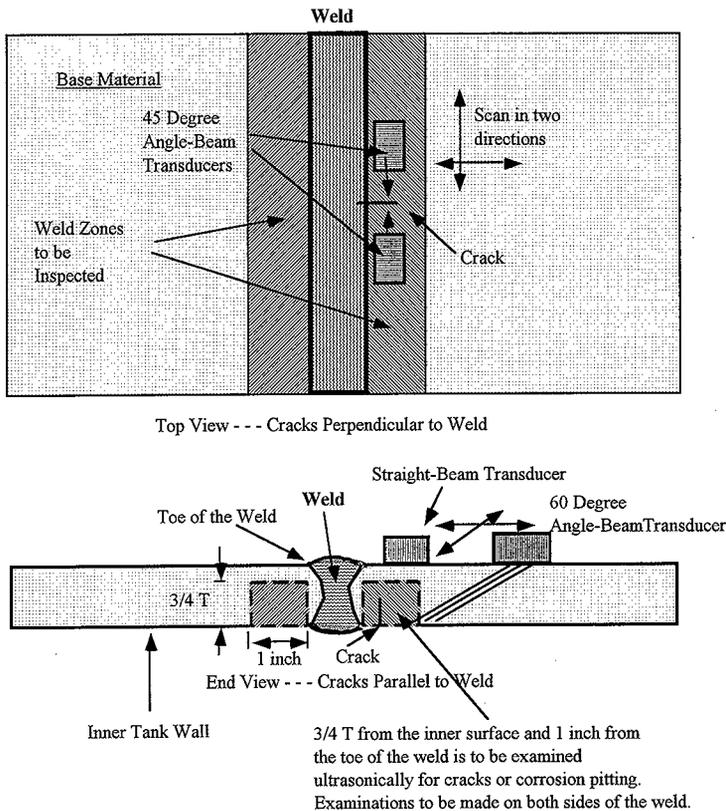


Figure 5.3 Measurement of Crack Depths in Side Wall of the Tank

**Cracks in the Heat Affected Zone of Vertical and Horizontal welds** - - The requirement for characterizing cracks across or adjacent to welds in the tank wall is described in Figure 5.4. This figure describes the weld zones that were to be examined which are positioned on the inner three fourths of the thickness of the plate and 1 inch from the toe of the weld. This zone is considered most likely to experience stress corrosion cracking. Cracks may be located either parallel or perpendicular to the weld. Two ultrasonic test procedures were used to detect these cracks. The first used two sets 45-degree angle-beam transducers to detect and size cracks perpendicular to the weld. Both sides of the welds were examined simultaneously.

The second set used one 60-degree angle-beam transducers to detect and size cracks parallel to the weld and a dual-element straight beam to detect and measure the depth of any pitting that might be present near the weld.

It should be noted that there is an area adjacent to the toe of the weld that could not be examined. The upper sketch in Figure 5.4 shows the position of the 45-degree transducers. Because of the size of the housing and holding fixture for these transducers, the ultrasonic beam was not able to detect cracks perpendicular to the weld that did not extend at least 0.5 inches beyond the toe of the weld. A similar situation exists for the straight beam transducer shown in the lower sketch of Figure 5.4. The area within 0.6 inches of the toe of the weld could not be examined for pits or corrosion.



**Figure 5.4 Top and End Views of Areas to be Ultrasonically Examined**

**Cracks Parallel and Perpendicular to Welds** -- Figure 5.5 describes the PDT results reported for detecting and sizing of cracks located both parallel and perpendicular to welds. Since the test plates developed by PNNL did not contain welds, a simulated weld crown strip was attached to the plates at appropriate locations that oriented cracks in either a parallel or perpendicular position with respect to the weld. The specification defined an accuracy requirement of +/- 0.10 inches for crack characterization. Analysis of the data provided by the hard copy and report data established the value for cracks parallel and perpendicular to welds at 0.080 inches - within the requirements set forth in the SOW.

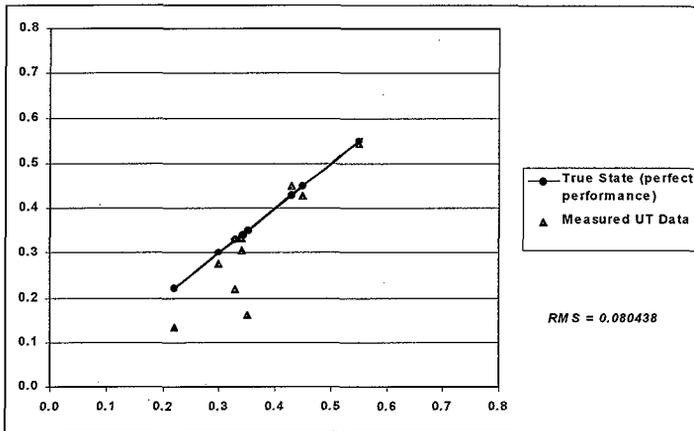


Figure 5.5 Measurement of Cracks Parallel and Perpendicular to the Welds

**Conclusions Reached from Performance Demonstration Tests** -- The PDT established that the ultrasonic system and personnel participating in the examinations have met the criteria established in the SOW for the examination of the base material and welds in the double-shell tanks. The system is therefore qualified to perform these specific areas of Tank 241-AN-107.

**Results from the Examination of Tank 241-AN-107** -- During July 1998 the COGEMA and Swain teams examined selected areas of the primary tank of Tank 241-AN-107. The areas to be examined were identified in the SOW as:

1. Vertical strips approximately 30 inches wide by 35 feet long. The vertical strips may be comprised of one or more strips whose total width is 30 inches. This examination is to be designed to detect and characterize any wall thinning, corrosion pits or cracks in the wall of the primary tank.
2. Twenty feet of the cylinder-to-lower knuckle weld to detect and size cracks that lie parallel or perpendicular to the weld and to detect and measure depth of any corrosion pits in the area surrounding the weld.
3. One vertical weld joining the lowest shell course plates (approximately 10 feet) to detect cracks on the inner surface that lie parallel or perpendicular to the weld and to detect and measure depth of any corrosion pits in the area surrounding the weld.
4. One vertical weld joining the next to the lowest shell course plates (approximately 10 feet) to detect cracks on the inner surface that lie parallel or perpendicular to the weld and to detect and measure depth of any corrosion pits in the area surrounding the weld.

Figure 5.6 describes the areas scanned in Tank 241-AN-107. To meet the requirements set forth for examination of vertical welds in the shell course, the COGEMA and Swain teams examined vertical welds in Plates 2, 3 and 4. To meet the requirements for examining a 30-inch wide swath of the primary tank they used two 15-inch wide scans.

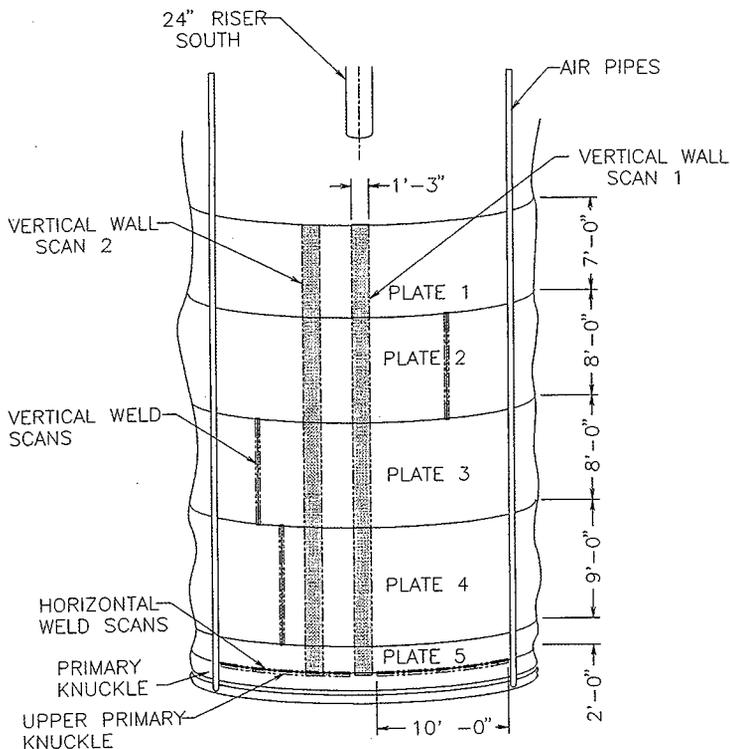


Figure 5.6 Areas Scanned During the Ultrasonic Examination of Tank 241-AN-107

**Results of Examination of the Selected Areas of Tank 241-AN-107** -- COGEMA provided hard copies and a report by the Swain analyst interpreting the finding of the areas examined ultrasonically. The data provided by the Swain analyst was as follows:

1. Wall Thinning - - None of the areas scanned showed any wall thinning. As would be expected, the wall thickness varied from plate to plate and within the same plate, but all were within manufacturing tolerances and no areas were below the nominal thickness (0.50, 0.875 inches). One small section in Plate #1 (See Figure 5.6) showed a small increase in plate thickness which the analyst suggested might be related to an area where a weld attachment had been made during the construction of the tank.
2. Corrosion Pitting - - No corrosion pitting was detected in the side wall or weld areas that were scanned.
3. Cracks in Tank Side Wall and Weld Regions - - No cracks were detected in the side wall or the vertical or circumferential welds that were scanned during the examination.

PNNL staff reviewed all of the hard copy scans and the data provided in the reports. The reviewers concur with the findings of the Swain and COGEMA analysts.

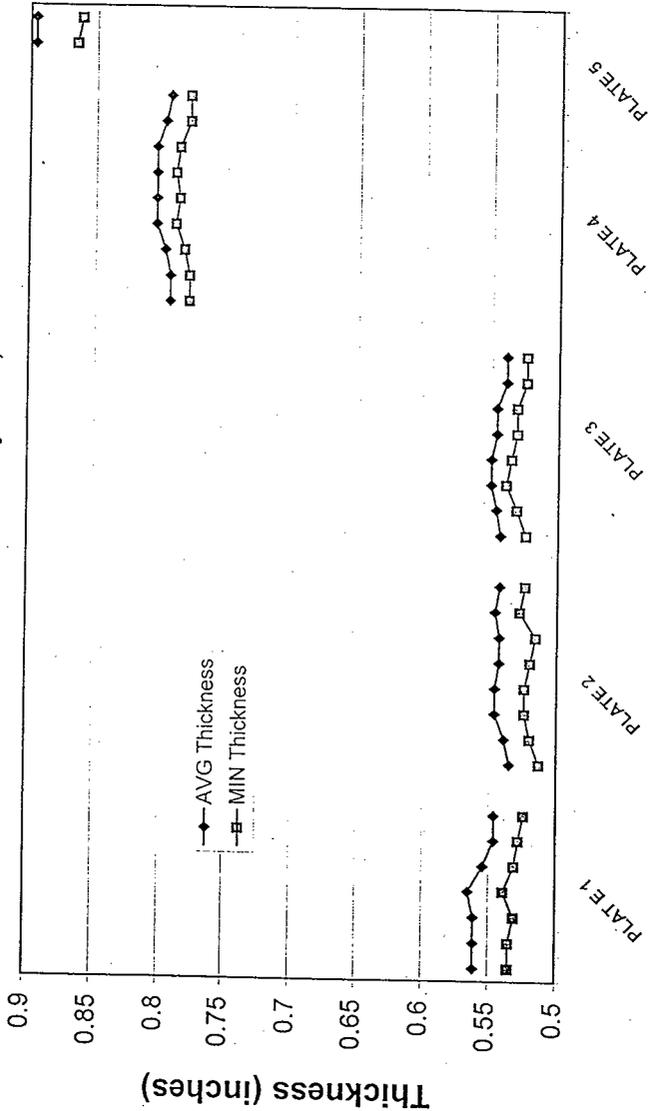
**Appendix B**  
**Inspection Report for DST 241-AN-107**

The following reports cover the ultrasonic examinations performed on the AN-107 primary tank wall, and primary tank vertical and horizontal welds. The reports contain information to identify equipment, calibration standards, transducer type, scan area, recorded data, and examination personnel. Graphs of the data are provided to show average and minimum wall thickness.

The following is a summary of the results associated with the areas examined. The data has been reviewed and approved by W. H. Nelson, COGEMA Engineering Level III Ultrasonic Examination Authority:

- vertical wall scans showed no reportable indications per the specification. The two scans are fifteen inches wide by approximately 35 feet long.
- vertical welds scanned showed no reportable indication per the specification. The scan area consisted of eight foot weld on plate course two and plate course three, and nine foot of weld on plate course four.
- the horizontal weld scanned showed no reportable indication per the specification. The scan areas were two ten foot section of plate course five to knuckle weld.

# T-PWV1 (107 AN Primary Tank)







- WALL SCAN -

**AUTOMATED ULTRASONIC THICKNESS  
DATA REPORT**

REPORT#  
SDI98-AN107-3  
REF. CAL. #  
TCAL03: TCAL04

LOCATION <u>HANFORD</u>	AREA <u>200 E</u>	SYSTEM <u>DOUBLE SHELL WASTE TANK</u>	EXAM START <u>14:05</u>	EXAM END <u>15:20</u>	JOB # <u>n10</u>
COMPONENT ID <u>AN107</u>			ACCEPTANCE CRITERIA SPECIAL NOTIFICATION REQUIREMENTS <u>0.500"</u>		NOMINAL THICKNESS <u>0.500"</u>
CONFIGURATION <u>PRIMARY TANK UPPER COARSE PLATE (#3)</u>			REPORTABLE THICKNESS <u>0.400"</u>	MINIMUM ALLOWABLE THKS <u>N/A</u>	
CIRCUMFERENCE/TOTAL LENGTH <u>43.0"</u>		SCAN LENGTH/PART <u>12"</u>	CALIBRATED RANGE <u>0.200" - 0.900"</u>	TEMP <u>85</u>	of <u>9"</u>

PROCEDURE <u>SDI-2.1</u>	REV <u>1</u>	MATERIAL TYPE <input type="checkbox"/> SS <input checked="" type="checkbox"/> CS OTHER <u>N/A</u>
INSPECTION PLAN/INSTRUCTION <u>AS PER PROCEDURE</u>		EXAMINATION SURFACE <input checked="" type="checkbox"/> OD <input type="checkbox"/> ID <input type="checkbox"/> PAINTED/COATED
FILE NAME/ITEM <u>T-PNVIP3</u>		CONDITION <u>NO PREP.</u>

DATA DISK# <u>DATA 2</u>	TRANSDUCER <input checked="" type="checkbox"/> DUAL <input checked="" type="checkbox"/> SGL <input checked="" type="checkbox"/> ODEG <input checked="" type="checkbox"/> ANGLE <u>45°</u>
X <sub>0</sub> REF. POINT (L <sub>0</sub> ) <u>1" downstream from weld</u>	Y <sub>0</sub> REF. POINT (W <sub>0</sub> ) <u>SEE VIDEO FOOTAGE</u>
SCAN WIDTH <u>15"</u>	'Y' START <u>0"</u>
	'Y' STOP <u>15"</u>

PART # / INDICATION	L START	L STOP	W START	W STOP	AVE. THK.	MIN. THK. R. LIG.	% AREA REPORTABLE	COMMENTS
1					0.543"	0.524"	0	
2					0.546"	0.531"	0	
3					0.550"	0.539"	0	
4					0.550"	0.535"	0	
5					0.546"	0.531"	0	
6					0.546"	0.531"	0	*
7					0.539"	0.524"	0	
8					0.539"	0.524"	0	
/								
SUMMARY								
MERGED RESULTS								

REMARKS

REFERENCE LEVEL CORRECTIONS =  
\* AREA FROM 6.09" - 6.49" (X) and from 6.5" - 15" (Y) noted to be slightly thicker than average possibly due to welded attachment on ID surface of tank seen with 0° and 45°.

Examiner <u>Ronald V. Swan</u> Level II Date <u>7-16-98</u>	Analyst <u>Ronald V. Swan</u> Level II Date <u>7-16-98</u>	Reviewer <u>WD Deb</u> <u>COGEMA</u> Level III Date <u>7.29.98</u>	Page <u>4</u> of <u>32</u>
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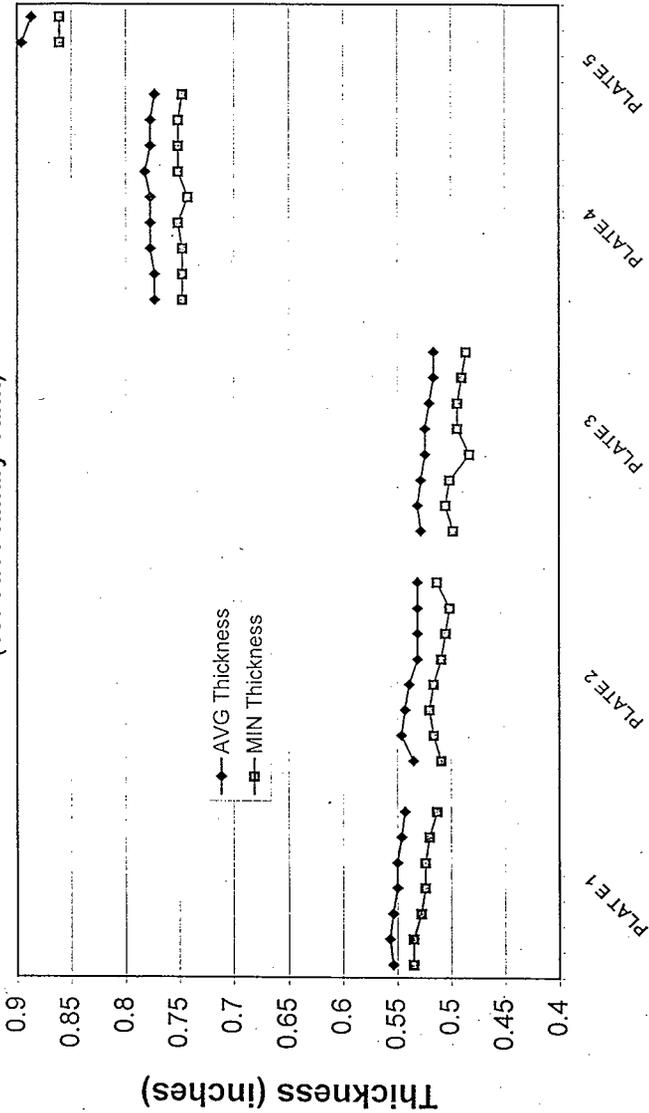
- WALL SCAN -

AUTOMATED ULTRASONIC THICKNESS DATA REPORT						REPORT# SDI98-AN107-4		
						REF. CAL.# TCAL03: TCAL04		
LOCATION	AREA	SYSTEM		EXAM START	EXAM END	JOB#		
HANFORD	ZOO E	DOUBLE SHELL WASTE TANK		15:30	17:15	N/A		
COMPONENT ID				ACCEPTANCE CRITERIA		NOMINAL THICKNESS		
AN107				SPECIAL NOTIFICATION REQUIREMENTS		0.750"		
CONFIGURATION				REPORTABLE THICKNESS		MINIMUM ALLOWABLE THKNS		
PRIMARY TANK LOWER CORSE PLATE (# 4)				0.600		N/A		
CIRCUMFERENCE/TOTAL LENGTH		SCAN LENGTH/PART		CALIBRATED RANGE		TEMP		
108.0"		12"		0.200" - 0.900"		85 °F		
PROCEDURE				MATERIAL TYPE				
SDI-2.1				<input type="checkbox"/> SS <input checked="" type="checkbox"/> CS <input type="checkbox"/> OTHER N/A				
INSPECTION PLAN/INSTRUCTION				EXAMINATION SURFACE		CONDITION		
AS PER PROCEDURE				<input checked="" type="checkbox"/> OD <input type="checkbox"/> ID <input type="checkbox"/> PAINTED/COATED		NO PREP.		
FILE NAME/ITEM#		DATA DISK#		TRANSDUCER				
T-PWVIP4.		DATA2		<input checked="" type="checkbox"/> DUAL <input checked="" type="checkbox"/> SGL <input checked="" type="checkbox"/> DDEG <input checked="" type="checkbox"/> ANGLE 45°				
X <sub>0</sub> REF. POINT (L <sub>0</sub> )	UPPER	Y <sub>0</sub> REF. POINT (W <sub>0</sub> )	SCAN WIDTH		'Y' START	'Y' STOP		
1" DOWNSTREAM FROM WELD	✓	SEE VIDEO FOOTAGE	15"		0"	15"		
PART # / INDICATION	L START	L STOP	W START	W STOP	AVE. THK.	MIN. THK. R. LIG.	% AREA REPORTABLE	COMMENTS
1					0.793"	0.778"	0	
2					0.793"	0.778"	0	
3					0.797"	0.782"	0	
4					0.804"	0.789"	0	
5					0.804"	0.786"	0	
6					0.804"	0.789"	0	
7					0.804"	0.786"	0	
8					0.797"	0.778"	0	
9					0.793"	0.778"	0	
SUMMARY MERGED RESULTS								
REMARKS								
REFERENCE LEVEL CORRECTION = 0 dB								
NO RECORDABLE INDICATIONS WERE NOTED WITH ANGLE BEAM TRANSDUCERS								
EXAMINER Ronald V. Swain Level III Date 7-16-98		ANALYST Ronald V. Swain Level III Date 7-16-98		REVIEWER WJL Level III Date 7-22-98		PAGE 5 of 32		



# T- PWV2

(107 AN Primary Tank)



- #2 WALL SCAN -

**AUTOMATED ULTRASONIC THICKNESS  
DATA REPORT**

REPORT#  
SDI 98-AN107-6  
REF. CAL.#  
TCAL06; TCAL07

LOCATION <u>HANFORD</u>	AREA <u>200 E</u>	SYSTEM <u>DOUBLE SHELL WASTE TANK</u>	EXAM START <u>10:10</u>	EXAM END <u>12:41</u>	JOB # <u>N/A</u>				
COMPONENT ID <u>AN107</u>	ACCEPTANCE CRITERIA <u>SPECIAL NOTIFICATION REQUIREMENTS</u>			NOMINAL THICKNESS <u>0.500"</u>					
CONFIGURATION <u>PRIMARY TANK UPPER COARSE PLATE (#1 - SECOND)</u>	TO <u>TO</u>	REPORTABLE THICKNESS <u>0.400"</u>	MINIMUM ALLOWABLE THKNS <u>N/A</u>						
CIRCUMFERENCE/TOTAL LENGTH <u>84.0"</u>	SCAN LENGTH/PART <u>12"</u>	CALIBRATED RANGE <u>0.200" - 0.900"</u>	TEMP <u>85</u>	°F					
PROCEDURE <u>SDI-2.1</u>	REV <u>1</u>	MATERIAL TYPE <input type="checkbox"/> SS <input checked="" type="checkbox"/> CS <input type="checkbox"/> OTHER <u>N/A</u>	EXAMINATION SURFACE <input checked="" type="checkbox"/> OD <input type="checkbox"/> ID <input type="checkbox"/> PAINTED/COATED						
INSPECTION PLAN/INSTRUCTION <u>AS PER PROCEDURE</u>	FILE NAME/ITEM# <u>T-PIN V2 P.1</u>	DATA DISK# <u>DATA 3</u>	TRANSDUCER <input checked="" type="checkbox"/> DUAL <input checked="" type="checkbox"/> SGL <input checked="" type="checkbox"/> 00EG <input checked="" type="checkbox"/> ANGLE <u>45°</u>	CONDITION <u>NO PREP</u>					
X <sub>0</sub> REF. POINT (Lx) <u>6" DOWNSTREAM OF WELD</u>	Y <sub>0</sub> REF. POINT (W <sub>0</sub> ) <u>SEE VIDEO FOOTAGE</u>	SCAN DUAL <u>S</u>	"Y" START <u>0</u>	"Y" STOP <u>15"</u>					
PART #1 INDICATION	L START	L STOP	W START	W STOP	AVE. THK.	MIN. THK. R. LIG.	% AREA REPORTABLE	COMMENTS	
1					0.554"	0.535"	0		
2					0.557"	0.535"	0		
3					0.554"	0.528"	0		
4		N			0.550"	0.524"	0		
5			A		0.550"	0.524"	0		
6					0.546"	0.520"	0		
7					0.543"	0.513"	0		
SUMMARY									
MERGED RESULTS									
REMARKS									
REFERENCE LEVEL CORRECTION = 0 dB									
NO RECORDABLE INDICATIONS WERE NOTED WITH ANGLE BEAM TRANSDUCERS									
Examiner <u>Ronald V. Swain</u> Level <u>II</u> Date <u>7-23-98</u>			Analyst <u>Ronald V. Swain</u> Level <u>II</u> Date <u>7-23-98</u>			Reviewer <u>WKS Nelson</u> COC# <u>ema</u> Level <u>III</u> Date <u>7-29-98</u>		Page <u>8</u> of <u>32</u>	

- #2 WALL SCAN -

AUTOMATED ULTRASONIC THICKNESS DATA REPORT						REPORT# SDT 98-AN107-7		
						REF. CAL.# TCALOG-TCAL07		
LOCATION HANFORD	AREA 200 E	SYSTEM DOUBLE SHELL WASTE TANK		EXAM START 14:18	EXAM END 17:08	JOB# N/A		
COMPONENT ID AN107				ACCEPTANCE CRITERIA SPECIAL NOTIFICATION REQUIREMENTS		NOMINAL THICKNESS 0.500		
CONFIGURATION PRIMARY TANK UPPER COARSE PLATE (#2 - SECOND SCAN)				REPORTABLE THICKNESS 0.400		MINIMUM ALLOWABLE THKNS N/A		
CIRCUMFERENCE/TOTAL LENGTH 94.0		SCAN LENGTH/PART 12		CALIBRATED RANGE 0.200" - 0.900"		TEMP 85 °F		
PROCEDURE SDT-2.1				MATERIAL TYPE <input type="checkbox"/> SS <input checked="" type="checkbox"/> CS OTHER N/A				
INSPECTION PLAN/INSTRUCTION AS PER PROCEDURE				EXAMINATION SURFACE <input checked="" type="checkbox"/> OD <input type="checkbox"/> ID <input type="checkbox"/> PAINTED/COATED		CONDITION NO PREP		
FILE NAME/ITEM# T-PWV2D2		DATA DISK# DATA 4		TRANSDUCER <input checked="" type="checkbox"/> DUAL <input checked="" type="checkbox"/> SGL <input checked="" type="checkbox"/> ODEG <input checked="" type="checkbox"/> ANGLE 45°				
X <sub>0</sub> REF. POINT (L <sub>0</sub> ) 1" from upper weld E		Y <sub>0</sub> REF. POINT (W <sub>0</sub> ) SEE VIDED FOOTAGE		SCAN WIDTH 15"		"Y" START 0"		
						"Y" STOP 15"		
PART #1 INDICATION	L START	L STOP	W START	W STOP	AVE. THK.	MIN. THK. R. LIG.	% AREA REPORTABLE	COMMENTS
1					0.535"	0.509"	0	
2					0.546"	0.516"	0	
3					0.543"	0.520"	0	
4					0.539"	0.516"	0	
5			N		0.531"	0.509"	0	
6				A	0.531"	0.505"	0	
7					0.531"	0.501"	0	
8					0.531"	0.513"	0	
SUMMARY								
MERGED RESULTS								
REMARKS								
REFERENCE LEVEL CORRECTION = 0 dB								
NO RECORDABLE INDICATIONS WERE NOTED WITH ANGLE BEAM TRANSDUCERS								
Examined <i>Ronald V. Rain</i> Level II Date 7-23-98			Analyst <i>Ronald V. Rain</i> Level II Date 7-23-98			Reviewer <i>WJ Nelson</i> COLEMA Level III Date 7-29-98		Page 9 of 32



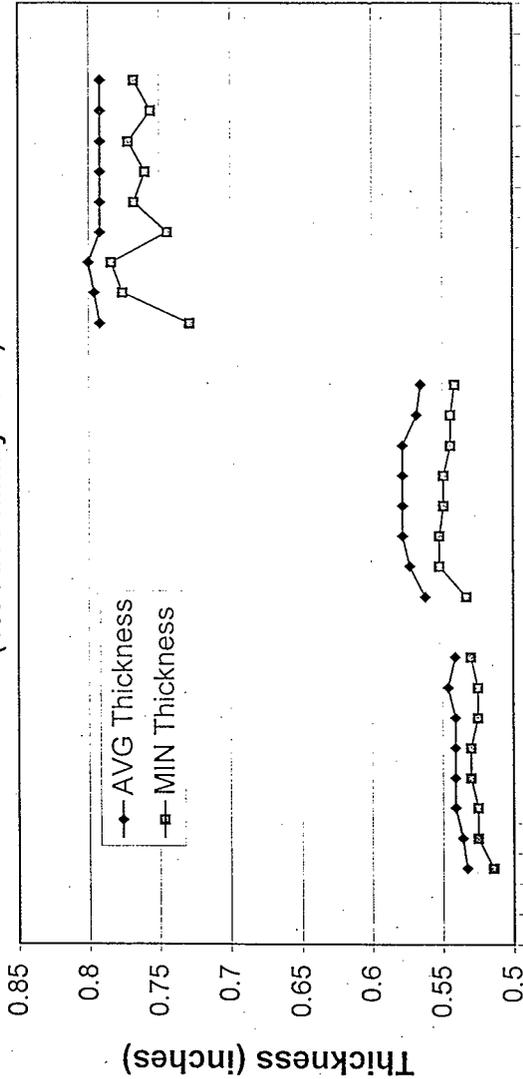
- #2 WALL SCAN -

AUTOMATED ULTRASONIC THICKNESS DATA REPORT						REPORT# SDI 98-AN107-9		
						REF. CAL.# TCAL08:TCAL09		
LOCATION	AREA	SYSTEM	EXAM START	EXAM END	JOB#			
HANFORD	200E	DOUBLE SHELL WASTE TANK	16:48	17:48	N/A			
COMPONENT ID		ACCEPTANCE CRITERIA			NOMINAL THICKNESS			
AN107		SPECIAL NOTIFICATION REQUIREMENTS			0.750			
CONFIGURATION		TO		REPORTABLE THICKNESS		MINIMUM ALLOWABLE TRNS		
PRIMARY TANK LOWER COARSE PLATE		(#4 - SECOND SCAN)		0.600		N/A		
CIRCUMFERENCE/TOTAL LENGTH		SCAN LENGTH/PART		CALIBRATED RANGE		TEMP		
108.0"		12"		0.200" - 0.900"		85 °F		
PROCEDURE		REV		MATERIAL TYPE				
SDI-2.1		1		<input type="checkbox"/> SS <input checked="" type="checkbox"/> CS OTHER N/A				
INSPECTION PLAN/INSTRUCTION		EXAMINATION SURFACE			CONDITION			
AS PER PROCEDURE		<input checked="" type="checkbox"/> OD <input type="checkbox"/> ID <input type="checkbox"/> PAINTED/COATED			NO PREP			
FILE NAME/ITEM#		DATA DISK#		TRANSDUCER				
T-PWVZ.P4		DATA 5		<input checked="" type="checkbox"/> DUAL <input checked="" type="checkbox"/> SGL <input checked="" type="checkbox"/> ODEG <input checked="" type="checkbox"/> ANGLE 45°				
X <sub>0</sub> REF. POINT (L <sub>0</sub> )		Y <sub>0</sub> REF. POINT (W <sub>0</sub> )		SCAN WIDTH		'Y' STOP		
1" downstream of WELLS E		SEE VIDEO FOOTAGE		15"		15"		
PART #1 - INDICATION	L START	L STOP	W START	W STOP	AVE. THK.	MIN. THK. R. LIG.	% AREA REPORTABLE	COMMENTS
1					0.773"	0.747"	0	
2					0.773"	0.747"	0	
3					0.777"	0.747"	0	
4					0.777"	0.751"	0	
5					0.777"	0.742"	0	
6					0.782"	0.751"	0	
7					0.777"	0.751"	0	
8					0.777"	0.751"	0	
9					0.773"	0.747"	0	
N A								
SUMMARY								
MERGED RESULTS								
REMARKS								
REFERENCE LEVEL CORRECTION = 0 dB								
NO RECORDABLE INDICATIONS WERE NOTED WITH ANGLE BEAM TRANSDUCERS								
Examined <u>Ronald V. Parin</u> Level II Date <u>7-23-98</u>			Analyst <u>Ronald V. Parin</u> Level II Date <u>7-23-98</u>			Reviewer <u>W.D. [Signature]</u> COGEMA Level III Date <u>7-29-98</u>		Page <u>11</u> of <u>32</u>



# T-PVW

(107 AN Primary Tank)



T-PVW4

T-PVW3

T-PVW2

Weld ID

VERTICAL  
- AX SCAN -

**AUTOMATED ULTRASONIC THICKNESS  
DATA REPORT**

REPORT#  
SDI 98-AN107-11  
REF. CAL.#  
TCAL10; TCAL11

LOCATION <u>HANFORD</u>	AREA <u>200E</u>	SYSTEM <u>DOUBLE SHELL WASTE TANK</u>	EXAM START <u>11:05</u>	EXAM END <u>11:40</u>	JOB# <u>N/A</u>			
COMPONENT ID <u>AN107</u>			ACCEPTANCE CRITERIA <u>SPECIAL NOTIFICATION REQUIREMENT</u>	NOMINAL THICKNESS <u>0.500"</u>				
CONFIGURATION <u>PRIMARY TANK UPPER COARSE PLATE (#2 VERTICAL WELD)</u>			REPORTABLE THICKNESS <u>0.400"</u>	MINIMUM ALLOWABLE THKNS <u>N/A</u>				
CIRCUMFERENCE/TOTAL LENGTH <u>90.0"</u>		SCAN LENGTH/PART <u>12"</u>	CALIBRATED RANGE <u>0.200" - 0.900"</u>	TEMP <u>85</u>	°F			
PROCEDURE <u>SDI-2.1</u>			REV <u>1</u>	MATERIAL TYPE <input type="checkbox"/> SS <input checked="" type="checkbox"/> CS OTHER <u>N/A</u>				
INSPECTION PLAN/INSTRUCTION <u>AS PER PROCEDURE</u>			EXAMINATION SURFACE <input checked="" type="checkbox"/> OD <input type="checkbox"/> ID <input type="checkbox"/> PAINTED/COATED		CONDITION <u>NO PREP</u>			
FILE NAME/ITEM# <u>T-PLVW</u>		DATA DISK# <u>DATA 6</u>	TRANSDUCER <input checked="" type="checkbox"/> DUAL <input checked="" type="checkbox"/> SGL <input checked="" type="checkbox"/> ODEG <input checked="" type="checkbox"/> ANGLE <u>60°</u>					
X <sub>0</sub> REF. POINT (L <sub>0</sub> ) <u>1" ds of upper horiz weld E</u>		Y <sub>0</sub> REF. POINT (W <sub>0</sub> ) <u>4" of vertical weld</u>	SCAN WIDTH <u>5"</u>	"Y" START <u>-2.5"</u>	"Y" STOP <u>+2.5"</u>			
PART #1 INDICATION	L START	L STOP	W START	W STOP	AVE. THK.	MIN. THK. R. LIG.	% AREA REPORTABLE	COMMENTS
1					0.533"	0.514"	0	
2					0.536"	0.525"	0	
3					0.541"	0.525"	0	
4					0.541"	0.530"	0	
5					0.541"	0.530"	0	
6					0.541"	0.525"	0	
7					0.546"	0.525"	0	
8					0.541"	0.530"	0	

SUMMARY  
MERGED  
RESULTS

REMARKS

REFERENCE LEVEL CORRECTION = 0 dB

NO RECORDABLE INDICATIONS WERE NOTED WITH ANGLE BEAM TRANSDUCERS

NOTE: DATA, WHICH IS YELLOW ON THE PRINTOUT, IS SURFACE (COMPLAINT) NOISE FROM ANGLE BEAM TRANSDUCERS.

Examiner  
Ronald V. Parin  
Level II Date 7-23-98

Analyst  
Ronald V. Parin  
Level II Date 7-23-98

Reviewer  
W.D. DeLo COGEMA  
Level III Date 7-29-98

Page  
14 of 32

VERTICAL  
-AX SCAN-

**AUTOMATED ULTRASONIC THICKNESS  
DATA REPORT**

REPORT#  
SDI98-AN107-12  
REF. CAL.#  
TCAL10; TCAL11

LOCATION <u>HANFORD</u>	AREA <u>200E</u>	SYSTEM <u>DOUBLE SHELL WASTE TANK</u>	EXAM START <u>15:05</u>	EXAM END <u>15:50</u>	JOB # <u>N/D</u>			
COMPONENT ID <u>AN107</u>		ACCEPTANCE CRITERIA <u>SPECIAL NOTIFICATION REQUIREMENTS</u>			NOMINAL THICKNESS <u>0.500"</u>			
CONFIGURATION <u>PRIMARY TANK UPPER COARSE PLATE (#3 VERTICAL WELDS)</u>		REPORTABLE THICKNESS <u>0.400"</u>	MINIMUM ALLOWABLE TKNS <u>N/A</u>					
CIRCUMFERENCE/TOTAL LENGTH		SCAN LENGTH/PART <u>12</u>	CALIBRATED RANGE <u>0.200" - 0.900"</u>	TEMP <u>85</u>	°F			
PROCEDURE <u>SDI-2.1</u>		REV <u>1</u>	MATERIAL TYPE <input type="checkbox"/> SS <input checked="" type="checkbox"/> CS OTHER <u>N/A</u>					
INSPECTION PLAN/INSTRUCTION <u>AS PER PROCEDURE</u>		EXAMINATION SURFACE <input checked="" type="checkbox"/> OD <input type="checkbox"/> ID <input type="checkbox"/> PAINTED/COATED		CONDITION <u>NO PREP</u>				
FILE NAME/TEMP# <u>T-DSVW</u>	DATA DISK# <u>DATA 7</u>		TRANSDUCER <input checked="" type="checkbox"/> DUAL <input checked="" type="checkbox"/> SGL <input checked="" type="checkbox"/> DEEG <input checked="" type="checkbox"/> ANGLE <u>60°</u>					
X <sub>0</sub> REF. POINT (L) <u>1" d.s. of upper horiz. weld</u>	Y <sub>0</sub> REF. POINT (W) <u>1" e of vertical weld</u>	SCAN WIDTH <u>5"</u>	"Y" START <u>-2.5"</u>	"Y" STOP <u>+2.5"</u>				
PART #/ INDICATION	L START	L STOP	W START	W STOP	AVE. THK.	MIN. THK. R. LIG.	% AREA REPORTABLE	COMMENTS
1					0.562"	0.533"	0	
2					0.573"	0.552"	0	
3					0.578"	0.552"	0	
4					0.578"	0.549"	0	
5					0.578"	0.549"	0	
6					0.578"	0.544"	0	
7					0.568"	0.544"	0	
8					0.565"	0.541"	0	
SUMMARY MERGED RESULTS								
REMARKS								
REFERENCE LEVEL CORRECTION = 0 dB								
NO RECORDABLE INDICATIONS NOTED WITH ANGLE BEAM TRANSDUCERS								
NOTE: DATA WHICH IS YELLOW ON THIS PRINTOUT IS SURFACE (COMPLANT) NOISE FROM THE ANGLE BEAM TRANSDUCERS.								
Examiner <u>Ronald V. Poirier</u> Level <u>II</u> Date <u>7-23-98</u>	Analyst <u>Ronald V. Poirier</u> Level <u>II</u> Date <u>7-23-98</u>		Reviewer <u>WJL/eb</u> COGEMA Level <u>III</u> Date <u>7-29-98</u>			Page <u>15 of 32</u>		

VERTICAL  
- AX SCAN -

**AUTOMATED ULTRASONIC THICKNESS  
DATA REPORT**

REPORT#  
SDI 98-AN107-13  
REF. CAL.#  
TCAL10; TCAL11

LOCATION: <b>HANFORD</b>		AREA <b>ZOOE</b>	SYSTEM <b>DOUBLE SHELL WASTE TANK</b>		EXAM START <b>16:20</b>	EXAM END <b>17:10</b>	JOB # <b>N/A</b>	
COMPONENT ID <b>AN107</b>		ACCEPTANCE CRITERIA			NORMAL THICKNESS <b>0.750"</b>			
CONFIGURATION <b>PRIMARY TANK LOWER COARSE PLATE (#4 VERTICAL WELD)</b>		SPECIAL NOTIFICATION Requirements			MINIMUM ALLOWABLE THNS <b>N/A</b>			
CIRCUMFERENCE/TOTAL LENGTH <b>108.0"</b>		SCAN LENGTH/PART <b>12"</b>		REPORTABLE THICKNESS <b>0.600"</b>	CALIBRATED RANGE <b>0.200" - 0.900"</b>			
PROCEDURE <b>SDI-2.1</b>		REV <b>1</b>		MATERIAL TYPE <input type="checkbox"/> SS <input checked="" type="checkbox"/> CS OTHER <b>N/A</b>		TEMP <b>85</b>		
INSPECTION PLAN/INSTRUCTION <b>AS PER PROCEDURE</b>		DATA DISK <b>DATA 6</b>		EXAMINATION SURFACE <input checked="" type="checkbox"/> 00 <input type="checkbox"/> 01 <input type="checkbox"/> PAINTED/COATED		CONDITION <b>NO PREP</b>		
FILE NAME/ID <b>T-14VW</b>		Y <sub>0</sub> REF. POINT (IN) <b>1" d.s. of upper horiz. weld</b>		Y <sub>0</sub> REF. POINT (OUT) <b>1" d.s. of vertical weld</b>		TRANSducer <input checked="" type="checkbox"/> DUAL <input checked="" type="checkbox"/> SGL <input checked="" type="checkbox"/> DEG <input checked="" type="checkbox"/> ANGLE <b>60°</b>		
Y <sub>0</sub> REF. POINT (IN) <b>1" d.s. of upper horiz. weld</b>		Y <sub>0</sub> REF. POINT (OUT) <b>1" d.s. of vertical weld</b>		SCAN WIDTH <b>5"</b>	" START <b>-2.5"</b>	" STOP <b>+2.5"</b>		
PART # / INDICATION	L START	L STOP	W START	W STOP	Avg. THK.	MIN THK. R LIG.	% AREA REPORTABLE	COMMENTS
1					0.792"	0.728"	0	
2					0.796"	0.776"	0	
3					0.800"	0.784"	0	
4					0.792"	0.744"	0	
5					0.792"	0.768"	0	
6					0.792"	0.760"	0	
7					0.792"	0.772"	0	
8					0.792"	0.780"	0	
9					0.792"	0.768"	0	
SUMMARY MERGED RESULTS								
REMARKS								
REFERENCE LEVEL CORRECTION = 0 dB								
NO RECORDABLE INDICATIONS WERE NOTED WITH ANGLE BEAM TRANSDUCERS								
NOTE: YELLOW DATA ON THE PRINTOUT IS DUE TO SURFACE (COUPLANT) NOISE FROM THE ANGLE BEAM TRANSDUCER								
Examined <i>Ronald V. Duran</i> Level II Date 7-25-98			Analyst <i>Ronald V. Duran</i> Level II Date 7-25-98			Reviewer <i>W.D. DeLo</i> COGUMA Level III Date 7-29-98		Page 16 of 32

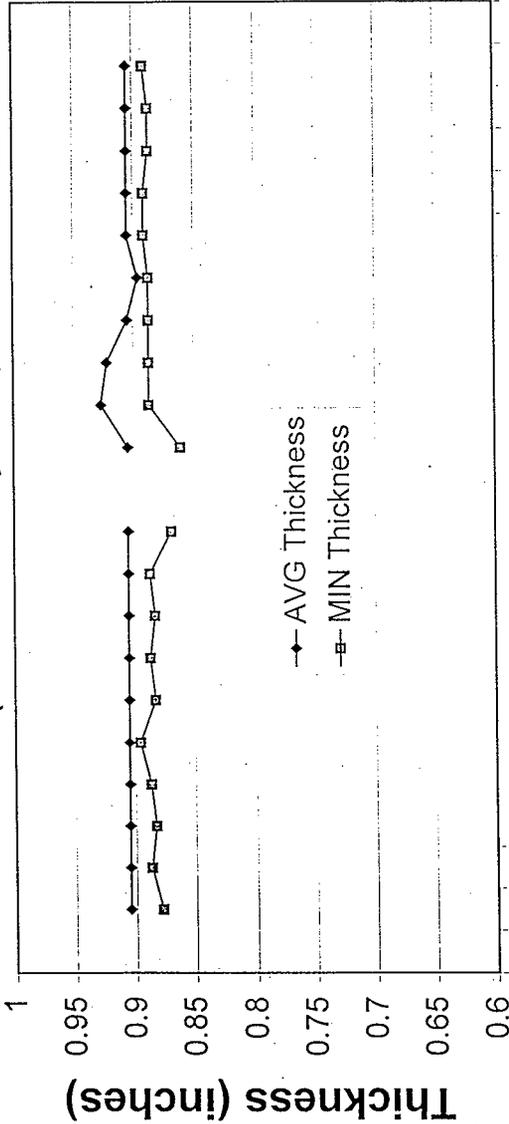






# T-HKW

(107 AN Primary Tank)



Scan 2

Scan Number

Scan 1

HORIZONTAL  
- AXIAL SCAN -

AUTOMATED ULTRASONIC THICKNESS DATA REPORT						REPORT# SDI 98-AN107-17		REF. CAL # TCAL10; TCAL11			
LOCATION HANFORD		AREA 200 E		SYSTEM DOUBLE SHELL WASTE TANK		EXAM START 17:50		EXAM END 18:50		JOB # N/A	
CONFIGURATION AN107						ACCEPTANCE CRITERIA SPECIAL NOTIFICATION REQUIREMENTS			NOMINAL THICKNESS 0.875"		
PRIMARY TANK LOWER TRANSITION - to - lower tank WELD (horiz.)						REPORTABLE THICKNESS 0.700"			MINIMUM ALLOWABLE THICKNESS N/A		
CIRCUMFERENCE TOTAL LENGTH 120.0"				SCAN LENGTH/PART 12		CALIBRATED RANGE 0.200" - 1.000"			TEMP 85° of		
PROCEDURE SDI-2.1						MATERIAL TYPE <input type="checkbox"/> SS <input type="checkbox"/> CS OTHER N/A			TRANSUCER		
INSPECTION PLAN/INSTRUCTION AS PER PROCEDURE						EXAMINATION SURFACE <input checked="" type="checkbox"/> OD <input type="checkbox"/> ID <input type="checkbox"/> PAINTED/COATED			CONDITION NO PREP		
FILE NAME/ITEM# T-HKW				DATA USE DATA 7		TRANSDUCER <input checked="" type="checkbox"/> DUAL <input type="checkbox"/> SGL <input checked="" type="checkbox"/> 0 DEG <input checked="" type="checkbox"/> ANGLE 60°			SCAN WIDTH 5"		
X% REF. POINT (W) SEE VIDEO FOOTAGE				Y% REF. POINT (W) % CF HORIZ. WELD		T START -2.5"			T STOP +2.5"		
PART # / INDICATION	L START *	L STOP *	W START *	W STOP *	AVE. THK.	MIN THK. R LIG.	% AREA REPORTABLE	COMMENTS			
1	0"	12"	-0.313"	+0.125"	0.905"	0.878"	0	* ROOT AREA GEOMETRY			
2	12"	24"	-0.250"	+0.313"	0.905"	0.887"	0	"			
3	24"	36"	-0.188"	+0.375"	0.905"	0.883"	0	"			
4	36"	48"	-0.250"	+0.313"	0.905"	0.887"	0	"			
5	48"	60"	-0.063"	+0.250"	0.905"	0.896"	0	"			
6	60"	72"	-0.375"	+0.125"	0.905"	0.883"	0	"			
7	72"	84"	-0.250"	+0.125"	0.905"	0.887"	0	"			
8	84"	96"	-0.125"	+0.375"	0.905"	0.883"	0	"			
9	96"	108"	-0.563"	+0.118"	0.905"	0.887"	0	"			
10	108"	120"	-0.563"	+0.438"	0.905"	0.869"	0	"			
SUMMARY											
MERGED RESULTS											
REMARKS											
REFERENCE LEVEL CORRECTION = 0 dB											
* ROOT GEOMETRY SEEN INTERMITTENTLY FOR ENTIRE LENGTH OF SCAN.											
NOTE: YELLOW DATA ON PRINTOUT IS SURFACE (COPLANT) NOISE FROM ANGLE BEAM TRANSDUCERS.											
Examined Ronald V. Wain Level II Date 7-25-98				Analysis Ronald V. Wain Level II Date 7-25-98				Reviewer W.D. Nelson Level III Date 7-29-98		Page 21 of 32	

Horizontal  
- AXIAL SCANS -

AUTOMATED ULTRASONIC THICKNESS DATA REPORT							REPORT # SDI 98-AN107-18	
							REF. CAL. # TCALIZ-TCALIZ	
LOCATION	AREA	SYSTEM		EXAM START	EXAM END	JOB #		
HANFORD	200 E	DOUBLE SHELL WASTE TANK		10:20	11:20	nm		
COMPONENT ID AN107			ACCEPTANCE CRITERIA SPEC. NOTIFICATION REQUIREMENTS			NOMINAL THICKNESS 0.875		
CONFIGURATION 2ND SCAN OF 10				REPORTABLE THICKNESS		MINIMUM ALLOWABLE THICKNESS		
PRIMARY TANK LOWER TRANSITION-TO-KNUCKLE WELD (HORIZ.)				0.700"		N/A		
CIRCUMFERENCE TOTAL LENGTH 120.0"		SCAF LENGTH PART 12		CALIBRATED RANGE 0.200" - 1.000"		TEMP 85 °F		
PROCEDURE SDI-2.1			REV 1		MATERIAL TYPE SS XCS OTHER N/A			
INSPECTION PLAN INSTRUCTION AS PER PROCEDURE				EXAMINATION SURFACE <input checked="" type="checkbox"/> TOP <input type="checkbox"/> BOTTOM <input type="checkbox"/> PAINT COATED		CONDITION NO PREP		
FILE NAME ITEM T-HKW2		DATA DISK DATA 7		TRANSDUCER <input checked="" type="checkbox"/> POINT <input checked="" type="checkbox"/> SCL <input checked="" type="checkbox"/> MODES <input checked="" type="checkbox"/> ANGLE 60°				
X <sub>0</sub> REF. POINT (IN) SEE VIDEO FOOTAGE		Y <sub>0</sub> REF. POINT (IN) E OF HORIZ. WELD		SCALE WIDTH 5	X START -2.5"	Y STOP +2.5"		
PART # / INDICATION	L START *	L STOP *	W START *	W STOP *	A.E. THK.	ML THK. R LIG.	% AREA REPORTABLE	COMMENTS
1	0.961"	12.0"	-0.375"	+0.520"	0.905"	0.861"	0	* POST AREA GEOMETRY
2	12.0"	22.9"	-0.750"	+0.750"	0.927"	0.887"	0	"
3	24.4"	35.1"	-0.188"	+0.688"	0.922"	0.887"	0	"
4	43.3"	46.9"	-0.250"	+0.688"	0.905"	0.887"	0	"
5	54.6"	60.0"	-0.875"	+0.0"	0.896"	0.887"	0	"
6	60.0"	72.0"	-0.438"	+0.688"	0.905"	0.891"	0	"
7	72.6"	80.4"	-0.750"	+0.563"	0.905"	0.891"	0	"
8	86.8"	96.0"	-0.688"	+0.438"	0.905"	0.887"	0	"
9	96.0"	108.0"	-0.688"	+0.563"	0.905"	0.887"	0	"
10	108.0"	120.0"	-0.375"	+0.938"	0.905"	0.891"	0	"
SUMMARY MERGED RESULTS								
REMARKS								
REFERENCE LEVEL CORRECTION = 0 dB								
* POST GEOMETRY SWN INTERMITTENTLY THROUGHOUT THE SCAN.								
NOTE: YELLOW DATA ON PRINTOUT IS SURFACE (COMPLAINT) NOISE FROM ANGLE BEAM TRANSDUCERS.								
Examined <i>Arnold V. Parai</i> Level II Date 7-25-98			Reviewed <i>Arnold V. Parai</i> Level II Date 7-25-98			Reviewed <i>W.D. Kline</i> COA/EMA Level III Date 7-29-98		Page 22 of 32





## AUTOMATED ULTRASONIC THICKNESS CALIBRATION SHEET

CALIBRATION REPORT#  
TCAL01 thru  
TCAL09  
REF REPORT #  
SDI98-AN109

LOCATION <b>HANFORD</b>		AREA <b>200E</b>	SYSTEM <b>DOUBLE SHELL WASTE TANK</b>		CALIBRATION BLOCK <b>SL692 / SDI-PT-1</b>														
PROCEDURE <b>SDI-2.1</b>		REV. <b>1</b>		THICKNESS <b>0.1" - 1.0" / 0.75"</b>			MATERIAL <b>CS</b>												
UT SYSTEM <b>P-SCAN</b>		SERIAL # <b>305</b>		REFERENCE BLOCK <b>1LW</b>															
SOFTWARE VERSION <b>P-SCAN-T-SCAN</b>		REV <b>6.04</b>		THICKNESS <b>1</b>			MATERIAL <b>CS</b>												
LINEARITY DUE DATE <b>9-16-98</b>		REFERENCE BLOCK TEMP <b>AMBIENT</b>			OF		PYRO SNV <b>N/A</b>												
SCANNER TYPE <b>AWS-5</b>		SERIAL # <b>406</b>		COUPLANT <b>WATER</b>			BATCH # <b>N/A</b>												
SCANNER CABLE <b>AWS</b>		CABLE LENGTH <b>330</b>			CABLE # <b>N/A</b>														
SIGNAL CABLE <b>RG-59</b>		CABLE LENGTH <b>330</b>			CABLE # <b>N/A</b>														
CHANNEL	TRANSDUCER MAKE	MODEL	FREQ	SIZE	SERIAL #	GATE EVAL METHOD	ANGLE	WEDGE TYPE	IMAGE										
1	KBA (Phys)	MSEB SE	5 MHz	8/2mm	1644	EDGE CONT	0°	INT	1										
2	KBA (Log)	MSEB SE	5 MHz	8/2mm	1644	PK-E CONT	0°	INT	2										
3	KBA	MWB4504c	4 MHz	8x9mm	2408	EDGE CONT	44°	INT.	3										
4	KBA	MWB4504c	4 MHz	8x9mm	2409	EDGE CONT	44°	INT.	4										
INITIAL CALIBRATION				CALIBRATION CHECKS															
DATE	7-6-98	7-6-98	7-7-98	7-7-98	7-9-98	7-9-98	7-10-98	7-10-98											
TIME	10:30	18:29	07:15	18:00	07:40	17:44	07:28	18:30											
REFLECTOR	BACKWALL	BACKWALL	BACKWALL	BACKWALL	BACKWALL	BACKWALL	BACKWALL	BACKWALL											
CH. 1	THK.1 0.900"	0.899"	0.908"	0.896"	0.891"	0.899"	0.908"	0.899"	0.899"										
	THK.2 0.200"	0.197"	0.201"	0.198"	0.201"	0.201"	0.203"	0.205"	0.202"										
CH. 2	THK.1 0.900"	0.903"	0.908"	0.899"	0.899"	0.908"	0.908"	0.908"	0.903"										
	THK.2 0.200"	0.205"	0.210"	0.205"	0.201"	0.210"	0.205"	0.201"	0.205"										
CH. 3	THK.1 0.630" NOTCH	0.649"	0.644"	0.631"	0.631"	0.627"	0.636"	0.631"	0.623"										
	THK.2 N/A	---	---	---	---	---	---	---	---										
CH. 4	THK.1 0.650" NOTCH	0.666"	0.658"	0.636"	0.644"	0.640"	0.649"	0.656"	0.644"										
	THK.2 N/A	---	---	---	---	---	---	---	---										
FILE #	TCAL01	TCAL02	TCAL03	TCAL04	TCAL05	TCAL07	TCAL08	TCAL09											
DISK #	CAL-1	CAL-1	CAL-1	CAL-1	CAL-1	CAL-1	CAL-1	CAL-1											
EXAMINER	RVS	RVS	RVS	RVS	RVS	RVS	RVS	RVS											
REMARKS <b>N/A</b>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Examiner <i>Ronald V. Swain</i></td> <td>Examiner <i>Ronald V. Swain</i></td> <td>Reviewer <i>WJ Delo</i></td> <td colspan="2">Page <b>28 of 32</b></td> </tr> <tr> <td>Level <b>II</b> Date <b>7-25-98</b></td> <td>Level <b>II</b> Date <b>7-25-98</b></td> <td>Level <b>III</b> Date <b>7-29-98</b></td> <td colspan="2"></td> </tr> </table>										Examiner <i>Ronald V. Swain</i>	Examiner <i>Ronald V. Swain</i>	Reviewer <i>WJ Delo</i>	Page <b>28 of 32</b>		Level <b>II</b> Date <b>7-25-98</b>	Level <b>II</b> Date <b>7-25-98</b>	Level <b>III</b> Date <b>7-29-98</b>		
Examiner <i>Ronald V. Swain</i>	Examiner <i>Ronald V. Swain</i>	Reviewer <i>WJ Delo</i>	Page <b>28 of 32</b>																
Level <b>II</b> Date <b>7-25-98</b>	Level <b>II</b> Date <b>7-25-98</b>	Level <b>III</b> Date <b>7-29-98</b>																	

**AUTOMATED ULTRASONIC THICKNESS  
CALIBRATION SHEET**

CALIBRATION REPORT#  
TCAL10 HARU  
TCAL13  
REF. REPORT #  
SDI98-AN107

LOCATION HARFORD AREA		SYSTEM DOUBLE SHELL WASTE TANK		CALIBRATION BLOCK SL692 / SDI-PT-1					
PROCEDURE SDI-2.1		REV. 1		THICKNESS 0.1"-1.0" / 0.75" MATERIAL CS					
UT SYSTEM P-SCAN		SERIAL # 305		REFERENCE BLOCK TLW					
SOFTWARE VERSION P-SCAN/T-SCAN		REV. 6.04		THICKNESS 1" MATERIAL CS					
LINEARITY DUE DATE 7-16-98				REFERENCE BLOCK TEMP AMBIENT °F PYRO SW N/A					
SCANNER TYPE AWS-S		SERIAL # 406		COUPLANT WATER BATCH # N/A					
SCANNER CABLE AWS				CABLE LENGTH 330' CABLE # N/A					
SIGNAL CABLE RG-59				CABLE LENGTH 330' CABLE # N/A					
CHANNEL	TRANSDUCER MAKE	MODEL	FREQ.	SIZE	SERIAL #	GATE EVAL METHOD	ANGLE	WEDGE TYPE	IMAGE
1	KBA	MWB6004E	4mhz	8x9mm	1855	EDGE CONT	60°	INT.	1
2	KBA	MWB6004E	4mhz	8x9mm	1854	EDGE CONT	60°	INT.	2
3	KBA	MSEB5E	5mhz	8/2mm	1644	EDGE CONT	0°	INT.	3
4	KBA	MSEB5E	5mhz	8/2mm	1645	EDGE CONT	0°	INT.	4
INITIAL CALIBRATION			CALIBRATION CHECKS						
DATE	7-11-98	7-11-98	7-13-98	7-13-98					
TIME	07:56	18:20	07:26	12:15					
REFLECTOR	BACKWALL	BACKWALL	BACKWALL	BACKWALL					
CH. 1	THK.1 0.090" ATCH	0.091"	0.091"	0.091"	0.091"				
	THK. 2								
CH. 2	THK.1 0.090" ATCH	0.091"	0.091"	0.091"	0.091"				
	THK. 2								
CH. 3	THK.1 1.00"	0.996"	0.996"	0.991"	0.991"				
	THK. 2 0.20"	0.205"	0.201"	0.201"	0.201"				
CH. 4	THK.1 1.00"	1.000"	0.996"	0.996"	0.996"				
	THK. 2 0.20"	0.192"	0.201"	0.192"	0.201"				
FILE #	TCAL10	TCAL11	TCAL12	TCAL13					
DISK #	CAL-1	CAL-1	CAL-1	CAL-1					
EXAMINER	RUS	RUS	RUS	RUS					
REMARKS N/A									
Examiner	Examiner		Reviewer		Page				
Level II Date 7-25-98	Level II Date 7-25-98		Level III Date 7-29-98		COGLEMA		29 of 32		

**AUTOMATED ULTRASONIC P-SCAN  
CALIBRATION SHEET**

CALIBRATION REPORT#  
45C-CAL1 *thru*  
45C-CAL4  
REF. REPORT #  
SDI98-AN107

LOCATION <u>HANFORD</u>				AREA <u>200E</u>		SYSTEM <u>DOUBLE SHELL WASTE TANK</u>				CALIBRATION BLOCK <u>SDI-PT-1</u>			
PROCEDURE <u>SDI-2.1</u>				REV. <u>1</u>		THICKNESS <u>0.75"</u>				MATERIAL <u>CS</u>			
UT SYSTEM <u>P-SCAN</u>				SERIAL # <u>305</u>		REFERENCE BLOCK <u>IIIW</u>							
SOFTWARE VERSION <u>P-SCAN/T-SCAN</u>				REV. <u>6.04</u>		THICKNESS <u>1"</u>				MATERIAL <u>CS</u>			
LINEARITY DUE DATE <u>9-16-98</u>						REFERENCE BLOCK TEMP <u>AMBIENT</u> °F				PYRO SN <u>N/A</u>			
SCANNER TYPE <u>AWS-5</u>				SERIAL # <u>406</u>		COUPLANT <u>WATER</u>				BATCH # <u>N/A</u>			
SCANNER CABLE <u>AWS</u>						CABLE LENGTH <u>330'</u>				CABLE # <u>N/A</u>			
SIGNAL CABLE <u>RG-59</u>						CABLE LENGTH <u>330'</u>				CABLE # <u>N/A</u>			
CHANNEL	TRANSDUCER MAKE	MODEL	FREQ.	SIZE	SERIAL #	GATE EVAL METHOD	ANGLE NOM. IACT.	WEDGE TYPE	IMAGE				
1	KBA	MWB4504e	4 Mhz	8x9 mm	2411	/	45	INT.	1				
2	KBA	MWB4504e	4 Mhz	8x9 mm	2414	N	45	INT.	2				
3	KBA	MWB4504e	4 Mhz	8x9 mm	2423	A	44	INT.	3				
4	KBA	MWB4504e	4 Mhz	8x9 mm	2412	/	44	INT.	4				
INITIAL CALIBRATION					CALIBRATION CHECKS								
DATE	<u>7-13-98</u>	<u>7-13-98</u>	<u>7-14-98</u>	<u>7-14-98</u>									
TIME	<u>13:15</u>	<u>18:24</u>	<u>08:25</u>	<u>12:38</u>									
REFLECTOR / ORIENTATION	<u>0.050 ID</u>	<u>0.050 ID</u>	<u>0.050 ID</u>	<u>0.050 ID</u>									
	<u>NOTCH</u>	<u>NOTCH</u>	<u>NOTCH</u>	<u>NOTCH</u>									
CH. 1	AMPLITUDE <u>88 dB</u>	<u>87 dB</u>	<u>86 dB</u>	<u>86 dB</u>									
	LOCATION <u>ID</u>	<u>ID</u>	<u>ID</u>	<u>ID</u>									
CH. 2	AMPLITUDE <u>90 dB</u>	<u>88 dB</u>	<u>86 dB</u>	<u>86 dB</u>									
	LOCATION <u>ID</u>	<u>ID</u>	<u>ID</u>	<u>ID</u>									
CH. 3	AMPLITUDE <u>85 dB</u>	<u>84 dB</u>	<u>84 dB</u>	<u>83 dB</u>									
	LOCATION <u>ID</u>	<u>ID</u>	<u>ID</u>	<u>ID</u>									
CH. 4	AMPLITUDE <u>88 dB</u>	<u>87 dB</u>	<u>86 dB</u>	<u>86 dB</u>									
	LOCATION <u>ID</u>	<u>ID</u>	<u>ID</u>	<u>ID</u>									
FILE #	<u>45C-CAL1</u>	<u>45C-CAL2</u>	<u>45C-CAL3</u>	<u>45C-CAL4</u>									
DISK #	<u>CAL-1</u>	<u>CAL-1</u>	<u>CAL-1</u>	<u>CAL-1</u>									
EXAMINER	<u>RUS</u>	<u>RUS</u>	<u>RUS</u>	<u>RUS</u>									
REMARKS	<u>N/A</u>												
Examiner	<u>Ronald V. Rain</u>		Examiner		<u>Ronald V. Rain</u>		Reviewer		<u>COGUMA</u>		Page		
Level	<u>II</u>		Level		<u>II</u>		Level		<u>III</u>		Date		
Date	<u>7-25-98</u>		Date		<u>7-25-98</u>		Date		<u>7-25-98</u>		30 of 32		

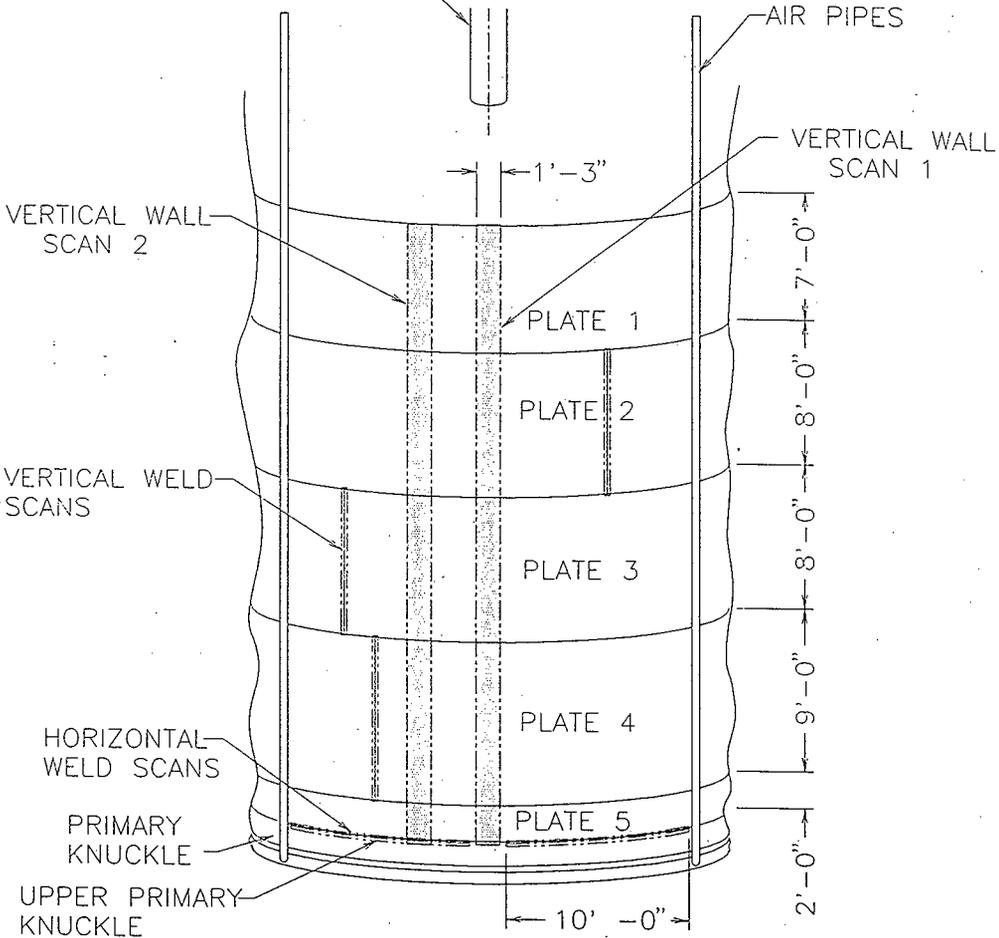
**AUTOMATED ULTRASONIC THICKNESS  
CALIBRATION SHEET**

CALIBRATION REPORT#  
K45-CALS #12  
K4-CAL6  
REF. REPORT #

LOCATION <b>HANFORD</b>		AREA <b>200E</b>		SYSTEM <b>DOUBLE SHELL WASTE TANK</b>		CALIBRATION BLOCK/ <b>SL 69Z / SDI-PT-1</b>			
PROCEDURE <b>SDI-2.1</b>		REV. <b>1</b>		THICKNESS <b>0.10"-1.0" / 0.75"</b>		MATERIAL <b>CS</b>			
UT SYSTEM <b>P-SCAN</b>		SERIAL # <b>305</b>		REFERENCE BLOCK <b>ILW</b>		THICKNESS <b>1"</b>		MATERIAL <b>CS</b>	
SOFTWARE VERSION <b>P-SCAN/T-SCAN</b>		REV. <b>6.04</b>		REFERENCE BLOCK TEMP <b>AMBIENT</b>		°F		PYRO SNI <b>N/A</b>	
LINEARITY DUE DATE <b>9-16-98</b>		SERIAL # <b>406</b>		COUPLANT <b>WATER</b>		BATCH # <b>N/A</b>			
SCANNER TYPE <b>AWS-5</b>		SERIAL # <b>406</b>		CABLE LENGTH <b>330'</b>		CABLE # <b>N/A</b>			
SCANNER CABLE <b>AWS</b>				CABLE LENGTH <b>330'</b>		CABLE # <b>N/A</b>			
SIGNAL CABLE <b>RG-59</b>				CABLE LENGTH <b>330'</b>		CABLE # <b>N/A</b>			
CHANNEL	TRANSDUCER MAKE	MODEL	FREQ.	SIZE	SERIAL #	GATE EVAL METHOD	ANGLE	WEDGE TYPE	IMAGE
1	KBA (Phys)	MSEBSE	5 MHz	8/2 mm	1644	EDGE CONT	0°	INT.	1
2	KBA (Log)	MSEBSE	5 MHz	8/2 mm	1644	PK-E CONT	0°	INT.	2
3	KBA	MWB4504e	4 MHz	8x9 mm	2411	EDGE CONT	45°	INT.	3
4	KBA	MWB4504e	4 MHz	8x9 mm	2414	EDGE CONT	45°	INT.	4
INITIAL CALIBRATION					CALIBRATION CHECKS				
DATE	<b>7-20-98</b>	<b>7-20-98</b>							
TIME	<b>07:33</b>	<b>15:09</b>							
REFLECTOR	<b>BACKWHL</b>	<b>BACKWHL</b>							
CH. 1	THK. 1	<b>0.200"</b>	<b>0.197"</b>	<b>0.197"</b>					
	THK. 2	<b>1.000"</b>	<b>0.996"</b>	<b>0.988"</b>					
CH. 2	THK. 1	<b>0.200"</b>	<b>0.201"</b>	<b>0.210"</b>					
	THK. 2	<b>1.000"</b>	<b>0.991"</b>	<b>0.988"</b>					
CH. 3	THK. 1	<b>0.950"</b>	<b>0.1658"</b>	<b>0.1649"</b>					
	THK. 2	<b>0.950"</b>	<b>0.1658"</b>	<b>0.1649"</b>					
CH. 4	THK. 1	<b>0.950"</b>	<b>0.1644"</b>	<b>0.1653"</b>					
	THK. 2	<b>0.950"</b>	<b>0.1644"</b>	<b>0.1653"</b>					
FILE #	<b>K45-CALS</b>		<b>K45-011</b>						
DISK #	<b>CAL-2</b>		<b>CAL-2</b>						
EXAMINER	<b>RUS</b>		<b>RUS</b>						
REMARKS <b>N/A</b>									
Examiner <i>Ronald U. Wain</i>		Examiner <i>Ronald U. Wain</i>		Reviewer <i>WJ Nelson</i>		COGSM <b>COGSM</b>		Page <b>31 of 32</b>	
Level <b>II</b> Date <b>7-25-98</b>		Level <b>II</b> Date <b>7-25-98</b>		Level <b>III</b> Date <b>7-29-98</b>					

24" RISER  
SOUTH

HNF-3353, Rev. 0



# AN-107 UT SCAN AREAS PRIMARY WALL

## DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	DST System Integrity Assessment Program	Date 9/24/98
Project Title/Work Order		EDT No. 625007
Results of Tank 241-AN-107 Ultrasonic Examination		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
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C. B. Bryan	S5-07				X
D. C. Bryson	S7-54				X
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