**UNITED STATES**
**NUCLEAR REGULATORY COMMISSION**
**REGION I**
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

July 15, 2010

MEMORANDUM TO: Arthur L. Burritt, Chief
Projects Branch 3
Division of Reactor Projects

THRU: Richard J. Conte, Chief ***/RA by E. Burket for/***
Engineering Branch 1
Division of Reactor Safety

FROM: Timothy L. OHara, Reactor Inspector ***/RA/***
Engineering Branch 1
Division of Reactor Safety

SUBJECT: INSERVICE INSPECTION ACTIVITIES INSPECTION FEEDER FOR SALEM UNIT 1, INSPECTION REPORT 05000272/2010003

The enclosed feeder contains input for the subject report resulting from inspection of Inservice Inspection (ISI) activities during the period from April 5, 2010 to June 28, 2010, at Salem Unit 1. The inspection was conducted using Inspection Procedure 71111.08, Inservice Inspection Activities and Temporary Instruction (TI) 2515/172, Reactor Coolant System Dissimilar Metal Butt Welds. The results of this inspection were presented to Mr. Ed Eilola, Salem Plant Manager, at an exit meeting on June 28, 2010.

Suggested Cover Letter Input

This feeder documents one NRC-identified finding of very low safety significance (Green). This finding was determined to be a violation of an NRC requirement. This feeder also documents a licensee-identified violation, which was determined to be of very low safety significance, in section 4OA7 of this report. This licensee-identified violation is also being documented as an issue of agency concern, in accordance with, IMC 0612-10 and IMC 0612-11. Because these violations are of very low safety significance and because the issues were entered into your corrective action process, these findings are being treated as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy.

Enclosure: Feeder for Salem Unit 1, Inspection Report No. 05000272/2010003, 05000311/2010003

C/178

cc w/Enclosure: **(VIA E-MAIL)**
A. Burritt, DRP
L. Cline, DRP
D. Schroeder, DRP, SRI - Salem Unit 1
T. O'Hara, DRS
R. Hardies, NRR
DRS Files

**SUNSI Review Complete: TLO/RJC (Reviewer's Initials)**
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## SUMMARY OF FINDINGS

### Reactor Safety

Cornerstone: Mitigating Systems

A. NRC Findings

- Green. The inspector identified a non-cited violation (NCV) of very low safety significance (Green) for the PSEG failure to perform Auxiliary Feedwater System (AFW) discharge piping pressure tests on buried piping components as required by 10 CFR 50.55a(g)(4) and the referenced American Society of Mechanical Engineers Code (ASME), Section XI, paragraph IWA-5244 for Salem Unit 1 and Salem Unit 2. The required tests are intended to intended to provide evidence of the structural integrity of the buried piping portions of the system. The affected piping is safety related, ASME Class 3, Seismic Class 1 piping. This performance deficiency is more than minor because the condition affected the Equipment Performance attribute (availability and reliability) of the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). No Cross Cutting Aspect is assigned to this violation because this condition is not indicative of current performance.

B. Licensee Identified Findings

- A violation of very low safety significance, which was identified by PSEG, was reviewed by the inspector. Corrective action taken or planned by PSEG were entered into the corrective action program. The violation and corrective action (Notification) number is described in Section 4OA7 of this report.

## REPORT DETAILS

1R08 Inservice Inspection (ISI) (7111108 - 1 Sample)

a. Inspection Scope

The inspector observed a selected sample of nondestructive examination (NDE) activities in process. Also, the inspector reviewed the records of selected additional samples of completed NDE and repair/replacement activities. The sample selection was based on the inspection procedure objectives and risk priority of those components and systems where degradation would result in a significant increase in risk of core damage. The observations and documentation reviews were performed to verify that the activities inspected were performed in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements.

The inspector reviewed the licensee's performance of a visual inspection (VT) of the Unit 1 Reactor Vessel Closure Head (RVCH) and the installed upper head penetrations. The inspector reviewed the visual procedure, the qualifications of the personnel and reviewed the inspection report documenting the inspection results. The inspector also reviewed the data sheets for the penetrant tests completed on 3 of the penetration welds of the RVCH.

The inspector reviewed records of ultrasonic testing (UT), visual testing (VT), penetrant testing (PT) and magnetic particle testing (MT) NDE processes. PSEG did not perform any radiographic testing (RT) during this outage. The inspector reviewed inspection data sheets and documentation for these activities to verify the effectiveness of the examiner, process, and equipment in identifying degradation of risk significant systems, structures and components and to evaluate the activities for compliance with the requirements of ASME Code, Section XI.

Steam Generator Inspection Activities

The inspectors reviewed a sample of the Salem Unit 1 steam generator Eddy Current Testing (ECT) tube examinations, and applicable procedures for monitoring degradation of steam generator tubes to verify that the steam generator examination activities were performed in accordance with the rules and regulations of the steam generator examination program, Salem Unit 1 steam generator examination guidelines, NRC Generic Letters, Code of Federal Regulations 10CFR50, Technical Specifications for Salem Unit 1, Nuclear Energy Institute 97-06, EPRI PWR steam generator examination guidelines, and the ASME Boiler and Pressure Vessel Code Sections V and XI. The review also included the Salem Unit 1 steam generator degradation assessment and steam generator Cycle 21 and 22 operational assessment. The inspector also reviewed and verified the personnel certifications of the personnel participating in the SG ECT inspections during the 1R20 refueling outage.

The inspector reviewed the PSEG efforts in identifying wear degradation to the tubing in the four SGs at Salem U1. The majority of these wear indications was attributed to Anti Vibration Bar (AVB) wear in the u bend regions of the four SGs. The inspector reviewed the analyses and evaluations which determined that a total of 14 SG tubes would be removed from service by plugging.

Boris Acid Corrosion Control Program Activities

The inspector reviewed the PSEG boric acid corrosion control program. The resident inspectors observed PSEG personnel performing boric acid walkdown inspections, inside containment, and in other affected areas outside of containment, at the beginning of the Unit 1 refueling outage. The inspector reviewed the Notifications generated by the walkdowns and the evaluations conducted by Engineering to disposition the Notifications. Additionally, the inspector reviewed a sample of Notifications and corrective actions carried out to repair the reported conditions.

Section XI Repair/Replacement Samples:

AFW System Piping, Control Air & Station Air: The inspector reviewed PSEG's discovery, reporting, evaluation and the repair/replacement of Unit 1 AFW piping which had been excavated for inspection during the April 2010 Unit 1 refueling outage (1R20). PSEG conducted this inspection in accordance with PSEGs Buried Piping Inspection Program.

The inspector reviewed the repair/replacement work orders and the 50.59 screening and evaluation for the AFW, CA and SA piping. The inspector reviewed the fabrication of the replacement piping, reviewed the documentation of the welding and NDE of the replacement piping and reviewed the pressure tests used to certify the replacement piping. Additionally, the inspector reviewed the specified replacement coating, the application of the replacement coating and the backfill of the excavated area after the piping had been tested.

The inspector reviewed the limited UT testing performed on the Unit 2 AFW piping and no significant degradation was reported.

Rejectable Indication Accepted For Service After Analysis:

The inspector reviewed the Notification and the UT data report of a rejectable wall thickness measurement on the #11 SG Feedwater elbow during 1R20. The inspector reviewed the additional wall thickness data taken to further define the condition and reviewed the finite element analysis (FEA) which verified that sufficient wall thickness remained to operate the component until the next refueling outage when it will be replaced.

Issue of Agency Concern; Buried, Safety Related Piping:

Because of an ongoing issue of Agency Concern about the degradation of buried piping this issue is being documented as a licensee-identified finding in Section 4OA7 in accordance with the guidance of IMC 0612-10.

During a planned excavation and inspection of the Unit 1 AFW buried piping to SG #12 and SG #14, PSEG identified severe corrosion (significantly below minimum wall thickness) of the safety related, ASME Class 3, Seismic Class 1 piping. PSEG repaired or replaced the affected Unit 1 buried AFW piping in May 2010. The inspector subsequently identified that this condition was a violation of 10 CFR 50, Appendix B, Criterion III, Design Control.

b. Finding

The inspector identified the following violation related to ASME, Section XI testing of buried Unit 1 and Unit 2 buried AFW piping.

Introduction The inspector identified a GREEN non-cited violation (NCV) of 10 CFR 50.55a(g)(4) and the referenced American Society of Mechanical Engineers (ASME) Code, Section XI, paragraph IWA-5244 for PSEG's failure to perform required pressure tests of buried components. This piping is safety related, 4.0" ID, ASME Class 3, Seismic Class 1 piping.

Description Portions of the Unit 1 and Unit 2 Auxiliary Feedwater (AFW) System piping is buried piping and has not been visually inspected since the plant began operation in 1977 for Unit 1 and since 1979 for Salem Unit 2. In April 2010, approximately 680 ft. (340 ft. of the #12 SG AFW supply and 340 ft. of the #14 SG AFW supply) of piping between the pump discharge manifold and the connection to the Main Feedwater piping to the affected SGs was discovered to be corroded to below minimum wall thickness (0.278") for the 1950 psi design pressure of the AFW System. The lowest wall thickness measured in the affected piping was 0.077". PSEG plans on excavating the Unit 2 buried piping to inspect the condition during the next Unit 2 outage scheduled for the spring of 2011.

10 CFR 50.55(a)(g)(4)(ii) requires licensees to follow the in-service requirements of the ASME Code, Section XI. Paragraph IWA-5244 requires licensees to perform pressure tests on buried components to demonstrate structural integrity of the tested piping. The pressure test required by IWA-5244 is considered to be an inservice inspection and is part of Section XI. Section XI and IWA-5244 do not specify any other non-destructive examinations (NDE) on buried components to ensure structural integrity. Thus, PSEG neglected to perform the only inservice inspection, intended to provide evidence of the structural integrity of this safety related buried piping. PSEG did not perform the required tests for Unit 1 during the 1st period (5/19/01 to 6/3/04) and 2nd period (6/24/04 to 5/20/08) periods of the 3rd In Service Inspection Interval, and for Unit 2 for the 1st period (5/19/01 to 6/3/04) and 2nd period (6/24/04 to 5/20/08) of the 3rd In Service Inspection Interval.

PSEG sought relief, from the NRC, from the previous Code required pressure testing in 1988 for Unit 1 only. Relief was granted to PSEG, by the NRC, to perform an alternate flow test in 1991 for Unit 1. However, PSEG did not perform the proposed alternate tests during the 2nd inservice interval and during the 1st (5/19/01 to 6/3/04) and 2nd (6/24/04 to 5/20/08) periods of the 3rd In Service Inspection Interval for Unit 1. Also, PSEG did not request relief from the required tests or perform perform the proposed alternate tests on the Unit 2 buried piping during the 1st period (5/19/01 to 6/3/04) and 2nd period (6/24/04 to 5/20/08) of the 3rd In Service Inspection Intervals. Thus, PSEG

missed an opportunity to identify and correct this performance deficiency which affects Unit 1 and Unit 2.

A second opportunity to identify and correct this performance deficiency was missed in 2002 when a similar condition (failure to perform buried piping pressure tests) was reported by Indian Point Unit 3. PSEG's review of operating experience reports did not identify that the same condition potentially existed at Salem Unit 1 and Unit 2.

PSEG replaced the affected buried Unit 1 piping during the refueling outage in April/May 2010. The required pressure tests were successfully completed after the replacement of the Unit 1 buried piping. Because the AFW system functioned as required during the plant shutdown prior to the start of 1R20 (April 2010), the system did not loose operability.

For Unit 2, PSEG completed an Operability Determination and a Risk Assessment for continued operation until the next scheduled refueling outage scheduled for spring 2011 for this issue. These evaluations determined that the condition was acceptable for continued operation until spring 2011.

Analysis The inspector determined that the licensee's failure to perform the required pressure test on this safety related buried piping was a performance deficiency for each Salem Unit. This condition was the result of the licensee's failure to meet the regulatory requirements of 10 CFR 50.55a(g)(4) and the ASME Code, Section XI, paragraph IWA-5244. This performance deficiency was reasonably within the licensee's ability to forsee and correct and should have been prevented.

The inspector determined that the performance deficiency was more than minor because this condition affected the Equipment Performance attribute (availability and reliability) of the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage).

This finding affects the mitigating systems cornerstone by affecting the secondary, short term decay heat removal capability. Because the finding did not result in loss of operability or functionality the inspector determined that the finding was of very low safety significance, Green.

The inspector determined that a Cross Cutting Aspect did not exist because the issue was not indicative of current performance because the condition existed since 1991, more than 3 years ago.

Enforcement 10 CFR 50.55a(g)(4) states, in part: "Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components ...which are classified as ASME Code Class 1, Class 2 and Class 3 must meet the requirements, ... , set forth in Section XI of editions of the ASME Boiler and Pressure Vessel Code". Paragraph IWA-5244, Buried Components, of Section XI says, in part,

> "(b) For buried components where a VT-2 visual examination cannot be performed , the examination requirement is satisfied by the following: (1) The system pressure test for buried components that are isolable by means of valves

shall consist of a test that determines the rate of pressure loss. Alternatively, the test may determine the change in flow between the ends of the buried components. ..."

Contrary to these requirements, PSEG did not perform the required pressure tests of the buried AFW piping to the #12 SG and #14 SG at Salem Unit 1 during the 2nd In Service Inspection Interval (2/27/88 to 5/19/01) and during the 1st (5/19/01 to 6/3/04) and 2nd (6/24/04 to 5/20/08) periods of the 3rd In Service Inspection Interval (5/19/01 to 5/19/11). Also, contrary to these requirements, PSEG did not perform the required pressure tests of the buried piping to the #22 SG and #24 SG for Unit 2 for the 1st period (5/19/01 to 6/3/04) and 2nd period (6/24/04 to 5/20/08) of the 3rd In Service Inspection Interval. Consequently, from 2/27/88 to 4/20/07) the required pressure tests were not performed to demonstrate structural integrity on the affected buried Unit 1 AFW piping.

Because PSEG entered this condition into the corrective action process (Notification 20459686) and because it is is of very low safety significance (Green), it is being treated as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. **NCV 50-272/2010-?? and NCV 50-311/2010-??**

## 4OA2 Identification and Resolution of Problems (71152)

a. Inspection Scope

The inspectors reviewed a sample of corrective action reports (Notifications), listed in Attachment 2 which involved in-service inspection related issues, to ensure that issues are being promptly identified, reported and resolved. The sample of Notifications selected did demonstrate that non-conformances are being identified, evaluated and appropriately addressed.

b. Findings

No findings of significance were identified.

## 4OA5 Temporary Instruction (TI) 2515/172

a. Inspection Scope

The Temporary Instruction (TI), 2515/172 provides for confirmation that owners of pressurized-water reactors (PWRs) have implemented the industry guidelines of the Materials Reliability Program (MRP) -139 regarding nondestructive examination and evaluation of certain dissimilar metal welds in the RCS containing nickel based Alloys 600/82/182.

During 1R20 PSEG inspected the dissimilar metal weld on the 1" reactor vessel drain piping with no detected indications. Salem Unit 1 has dissimilar metal welds in the eight reactor coolant system piping to reactor vessel nozzle safe end welds. No additional inspections or MSIP applications were performed during 1R20.

This TI requires documentation of specific questions in an inspection report. The questions and responses for the IR 05000272/2010003 section 4OA5 are included in this report as Attachment "B-1".

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

The inspectors presented the ISI inspection and TI 2515/172 inspection results to Mr. Ed Eilola, Salem Plant Manager, and other members of the PSEG staff at the conclusion of the inspection at an exit meeting on June 28, 2010 for Salem Unit 1. The licensee acknowledged the conclusions and observations presented. Some proprietary information was reviewed during this inspection and was properly destroyed. No proprietary information is contained in this report.

4OA7 Licensee Identified Violations

The following finding of very low safety significance was identified by PSEG and is a violation of 10 CFR 50, Appendix B, Criterion III, Design Control, an NRC requirement. PSEG did not provide an effective protective coating for the buried AFW piping. This issue has been evaluated via IMC 0609, Attachment 4, Initial Screening and Characterization of Findings and IMC 0612, Appendix B, Issue Screening.

During a planned excavation and inspection of the Unit 1 AFW buried piping to SG #12 and SG #14, PSEG identified severe corrosion (significantly below minimum wall thickness) of the safety related, ASME Class 3, Seismic Class 1 piping. The area of the worst corrosion resulted in a wall thickness of 0.077". PSEG repaired or replaced the affected Unit 1 buried AFW piping before returning the plant to operation.

This finding affects the mitigating systems cornerstone by affecting the secondary, short term decay heat removal capability. Because the finding did not result in loss of operability or functionality the inspector determined that the finding was of very low safety significance, Green. The inspector determined that a Cross Cutting Aspect did not exist because the issue was not indicative of current performance because the condition existed since 1977.

10 CFR 50, Appendix B, Criterion III, Design Control, states, in part "Measures shall be established to assure that applicable regulatory requirements and the design basis, ... , for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems and components."

Contrary to these requirements, PSEG did not provide engineering evaluations, vendor certification, or testing data to demonstrate that the specified coating would protect the buried AFW piping for the design lifetime of the plant. Also, PSEG did not assure appropriate quality standards which assure that deviations from such standards were controlled. Additionally, PSEG did not provide measures for the selection and review for suitability of the coating materials for the buried AFW piping application, for periodic inspections to ensure that the applied coating was protecting the buried AFW piping, and did not provide engineering details demonstrating the ability of the coating to protect the buried AFW piping for the design life of the plant.

Because PSEG entered this condition into the corrective action process (Notification 20456999) and because the issue is of very low safety significance (Green), this issue is being treated as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. **NCV 50-272/2010003-??**

## ATTACHMENT

## SUPPLEMENTAL INFORMATION

## KEY CONTACTS

Licensee Personnel:

Howard Berrick, PSEG
Pat Fabian, PSEG
Mohammad Ahmed, PSEG
Tony Oliveri, PSEG
Tom Roberts, PSEG
Ali Fakhar, PSEG
Len Rajkowski, PSEG
Dave Mora, PSEG
Edley Giles, PSEG
Walter Sheets, PSEG
Bob Montgomery, PSEG
Jim Mellchiona, PSEG
Bill Mattingly, PSEG
Pat Van Horn, PSEG
Jim Barnes, PSEG
Justin Werne, PSEG
Rick Villar, PSEG
Matthew Murray, PSEG

## LIST OF DOCUMENTS REVIEWED

Notifications:

20457869, Control Air Piping Leak*
20462034, Basis AFW Discharge Line Design Pressure*
20461785, Untimely retrieval of Design Documents*
20461255, U2 Containment Liner Blisters*
20459259, U2 Containment Liner Blisters*
20459689, failure to do IWA-5244 pressure tests*
20456999, Guided Wave (GW) pipe wall loss 20% to 44%*, in Equipment Apparent Cause Evaluation (EQ;ACE) Charter
20457854, see Equipment Apparent Cause Evaluation (EQ: ACE) Charter
20457869, Air Line Leak, in Equipment Apparent Cause Evaluation EQ: ACE Charter
20458147, see Equipment Apparent Cause Evaluation (EQ: ACE) Charter
20458148, see Equipment Apparent Cause Evaluation (EQ: ACE) Charter
20458568, see Equipment Apparent Cause Evaluation (EQ: ACE) Charter
20458554, 11 CA HDR Line In Fuel Xfer Area Degraded*
20458761, 1R20 CA Buried Pipe Coating Repair*
20458925, 1R20 SA Buried Pipe Coating Repair*
20457262, (88) 1R20 AF Buried Pipe Inspection Results*
20460624, Need Heat Trace on AF lines in FFT Area
20457877, U1 Containment Liner Corrosion at 78' El.*

20459259, U1 Corrosion on Containment Liner*
20459303, #14 AF pipe damaged penetration seal*
20459304, #12 AF pipe damaged penetration seal*
20459454, Request for Additional UT Data, 4/18/10 (due to 0.077" reading)*
20344017, Inspect steel liner in 1R19
20235636, NRC noted water running down containment wall
20459189, Question on location of RFO-14 location of a PZR shell weld
20290560, Replace section of 15B FWH shell-S1-R18
20457879, (184) 1R20 FAC(N18) 14# elbow below Tmin
20456828, (66) valve has visible boron buildup 1R20
20459232, Heavy Dry White Boron Vlv Packing (1R20)
20456834, Heavy Dry White Boron Vlv Packing (1R20)
20456840, Medium Dry White Boron Vlv Packing (1R20)
20456839, Medium Dry White Boron Vlv Packing (1R20)
20389147, Recordable ISI Indications on CVC Tank
20344017, Inspect Steel Liner in 1R19 @ Containment Sump
20235636, NRC Noted Water Running Down Containment Wall
20392631, ARMA From ISI Program Audit 2008
20460624, Need Heat Trace on AF lines in FTT Area
20333050, Response to NRC NOV EA-07-149
20322039, 2nd Interval ISI NRC Violation
20397518, A1CVC-1CV180 Chk Vlv Stuck Open - PI&R review
20444514, Boric Acid Leak from Drain Line - PI&R review
20445314, boron leak - PI&R review
20448241, Minor Packing Leak – BAC - PI&R review
20435861, 21SJ313 Has Boric Acid Leakage - PI&R review
20417331, Boric Acid Leak at 11 CV156 - PI&R review
20411151, Tubing leak on 1SS653 - PI&R review
20414343, 12 Charging Pump seal inj. Line - PI&R review
20395346, 12 Bat PP Seal Leak - PI&R review
20450330, Containment Liner Corrosion - PI&R review
20385733, Severe Corrosion on FP Valve - PI&R review
20438320, (217) Op Eval. Of Containment Corrosion - PI&R review
20387897, Significant outlet pipe corrosion - PI&R review
20397225, MIC Corrosion Causing Through Wall Leak - PI&R review
20436836, Repair Cracks in Battery Cells - PI&R review
20392145, Update U1 ISI Relief Request Book - PI&R review
20449447, Update Salem Unit 1 ISI 10 Yr Plan - PI&R review
20449744, Update Salem Unit 1 Containment ISI 10 Yr Plan - PI&R review
20449442, Update Salem Unit 2 Containment ISI 10 Yr Plan - PI&R review
20449554, Salem U2 RFO18 ISI Scope - PI&R review
20416605, INPO PSIRV Alloy 600 Program - PI&R review
20404057, Unit 2 ISI (MSIP) - PI&R review
20392631, ARMA FROM ISI PROGRAM AUDIT 2008 - PI&R review
20388065, Water leaking in decon room - PI&R review
20439023, 23 CFCU Head Leakage - PI&R review
20439022, SW Header Leakage 23 CFCU - PI&R review
20389148, 1R19 ISI Weld Exam Limitations - PI&R review
20416605, INPO PSIRV Alloy 600 Program - PI&R review
20449442, Update Salem 2 Containment ISI 10 yr. Plan - PI&R review
20449554, Salem Unit 2 RFO18 ISI Scope - PI&R review

20449747, Update Salem 2 ISI 10 Yr. Plan - PI&R review
20401542, Perform ISI BMV Exam on RPV Upper Head - PI&R review
20449063, SA U1 Service Inspec – ISI & U1 TI 2515 - PI&R review
20389147, Recordable ISI Indications on CVC Tank - PI&R review
20392145, Update U1 ISI Relief Request Book - PI&R review
20449744, Update Salem U1 Containment ISI 10 Yr. Plan - PI&R review
20409943, NRC RIS 2009-04 SG Tube Insp Rqmts – PI&R review
20459851, Section XI Exams Limited to 90% or Less – PI&R review
20450520, Recoat Affected Areas of Liner 2R18 – PI&R review
20457388, Excavation Issues – PI&R review

*Denotes this Notification was generated as a result of this inspection

Section XI Repair/Replacement Samples:

W.O. 60079414, 14" Carbon Steel Elbow FAC indication below minimum wall
W.O. 60084266, Salem U1 AF Buried Piping Inspection
W.O. 60089561, 80101381: Replace Aux FW U/G Piping
W.O. 60064104, Repair 15B FWH Area
W.O. 60084375, BACC Program repair to 1PS1
W.O. 60089612, BACC Program repair to S1CVC-14CV392
W.O. 60089615, BACC Program repair to S1SJ-13SJ25
W.O. 60089848, 80101382 Advanced Work Authorization #2 FTTA Replace Aux. Feedwater Pipe
W.O. 60089561, 80101381 Advanced Work Authorization – Replace Aux. FW U/G Piping, 4/9/10

Non-Code Repair

W.O. 60089848, Repair Non-nuclear, safety related CA Pipe, Unit 1 FTTA
W.O. 60089757, Test Non-nuclear, safety related CA Pipe Repair, Unit 1 FTTA

Miscellaneous Work Orders:

W.O. 60089917, Penetrations for CA & SA Lines, 4/23/10
W.O. 941017262, Activity 04, Excavate and Examine Auxiliary Feedwater Piping, Unit 2, 12/94
W.O. 941017262, Activity 03, Excavate and Examine Auxiliary Feedwater Piping, Unit 2, 12/94
W.O. 941017262, Activity 02, Excavate and Examine Auxiliary Feedwater Piping, Unit 2, 12/94
W.O. 941017262, Activity 01, Excavate and Examine Auxiliary Feedwater Piping, Unit 2, 12/94
W.O. 60089561, Flush New AFW piping 12 and 14

Drawings & Sketches:

205236A8761-54, Salem Nuclear Generating Station, Unit No. 1, Auxiliary Feedwater
Salem Unit 1 Aux Feed Piping, Allan Johnson, 4/10/10
80101381RO, Buried Pipe, Replaced AFW Piping Arrangement
207483A8923-11, Salem Nuclear Generating Station, Unit No. 1 – Reactor Containment Auxiliary Feedwater, Plans & Sections – Elev. 78' 10" & 100' 0", Mechanical Arrangement, Revision 8, 9/31/86

207483A8923-28, Sheet 1 of 4, Salem Nuclear Generating Station, Unit No. 1 – Reactor Containment Auxiliary Feedwater, Plans & Sections – Elev. 84',Mechanical Arrangement, Revision 8, 9/31/86
207483A8923-31, Sheet 2 of 4, Salem Nuclear Generating Station, Unit No. 1 – Reactor Containment Auxiliary Feedwater, Plans & Sections – Elev. 84', Mechanical Arrangement, Revision 8, 9/31/86
207483A8923-28, Sheet 3 of 4, Salem Nuclear Generating Station, Unit No. 1 – Reactor Containment Auxiliary Feedwater, Plans & Sections – Elev. 84',Mechanical Arrangement, Revision 8, 9/31/86
207483A8923-30, Salem Nuclear Generating Station, Unit No. 1 – Reactor Containment Auxiliary Feedwater, Plans & Sections – Elev. 84',Mechanical Arrangement, Revision 8, 9/31/86
207610A8896-12, Salem Nuclear Generating Station, Unit No. 1 – Auxiliary Building & Reactor Containmnet Compressed Air Piping, Aux. Building El. 84 East & React. Contain. El. 78, Mechanical Arrangement, Revision 8, 9/31/86

Design Change Packages/Equivalent Change Packages

80101382, Revision 2, Replace Salem Unit 1 AFW Piping from the Unit Mechanical Penetration Area El. 78'-0" to the Unit 1 Fuel Transfer Tube Area El. 100'-0"
80101381, Revision 1, Replace in-kind the Salem Unit 1 AF Piping that runs underground from the Unit 1 Fuel Transfer Tube Area to the Unit 1 Main Steam Outer Penetration Area

50.59 Applicability Reviews, Screenings & Evaluations

80101382; Salem Unit 1 12/14 AF Piping Reroute; 4/24/10

System & Program Health Reports & Self-Assessments:

Salem Boric Acid Corrosion Control Program Focused Area Self-Assessment, 1/2010
70106830, Salem S1R20 NRC ISI Inspection Check-In Self Assessment
70095327, Salem Boric Acid Corrosion Control Program Focused Area Self-Assessment, 4/29/09

Program Documents

PSEG Nuclear Salem Units 1 & 2, Alloy 600 Management Plan, Long Term Plan (LTP), Revision 2, Integrated Strategic Plan For Long Term Protection from Primary Water Stress Corrosion Cracking (PWSCC), 10/15/09
ASME, Section XI,1998 Edition, 2000 Addenda, IWA-5244 Buried Components
OAR-1, Owner's Activity Report, #S1RFO19, 1/15/09

Procedures

DETAILED AND GENERAL, VT-1 AND VT-3 VISUAL EXAMINATION OF ASME CLASS MC AND CC CONTAINMENT SURFACES AND COMPONENTS
SH.RA - AP.ZZ - 8805(Q) - Revision 4, 8/31/06; Boric Acid Corrosion Management Program
ER - AP - 331, Revision 4, Boric Acid Corrosion Control (BACC) Program
ER - AP - 331 - 1001, Revision 2, Boric Acid Corrosion Control (BACC) Inspection Locations, Implementation And inspection Guidelines
ER - AP - 331 - 1002, Revision 3, Boric Acid Corrosion Control (BACC) Program Identification, Screening, and Evaluation
ER - AP - 331 - 1003, Revision 1, RCS Leakage Monitoring And Action Plan
ER - AP - 331 - 1004, Revision 2, Boric Acid Corrosion Control (BACC) Program Training and Qualification
ER - AA - 330 - 001, Revision 7, SECTION XI PRESSURE TESTING
LS - AA - 125, Revision 13; Corrective Action Program (CAP) Procedure
LS - AA - 120, Revision 8; Issue Identification And Screening Process
SH.RA-IS.ZZ-0005(Q)-Revision 6; VT-2 Visual Examination Of Nuclear Class 1, 2 and 3 Systems
SH.RA-IS.ZZ-0150(Q) – Revision 8, 10/19/04; Nuclear Class 1, 2, 3 and MC Component Support Visual Examination
OU-AP-335-043, Revision 0; BARE METAL VISUAL EXAMINATION (VE) OF CLASS 1 PWR COMPONENTS CONTAINING ALLOY 600/82/182 AND CLASS 1 PWR REACTOR VESSEL UPPER HEADS
OU-AA-335-015, Revision 0; VT 2 - VISUAL EXAMINATION
Areva NP, Inc., Engineering Information Record 51-9118973-000; Qualified Eddy Current Examination Techniques for Salem Unit 1 Areva Steam Generators, 10/15/09
AREVA NP 03-9123233, Revision 000, 10/13/09; Salem Unit 2 RVCH Flange Repair
SC.MD-GP.ZZ-0035(Q) – Revision 9, PRESSURE TESTING OF NUCLEAR CLASS 2 AND 3 COMPONENTS AND SYSTEMS, 02/02/10
SH.MD-GP.ZZ-0240(Q) – Revision 10, SYSTEM PRESSURE TEST AT NORMAL OPERATING PRESSURE AND TEMPERATURE, 7/29/09
S2.OP-AF-0007(Q)-Revision 20, 12/23/09; INSERVICE TESTING AUXILIARY FEEDWATER VALVES, MODE 3
ER-AA-5400-1002, Revision 1, BURIED PIPING EXAMINATION GUIDE
Specification No. S-C-MPOO-MGS-0001; Piping Schedule SPS54, Auxiliary Feedwater, Revision 6
PSEG Test Procedure 10-H-8-R1, Unit 2 Auxiliary Feedwater 2100/2150 Hydro; 9/21/78

NDE Examination Reports & Data Sheets

003753, VT-10-113, PRV nozzle sliding support
003754, VT-10-114, RPV nozzle sliding support
006325, UT-10-041, PZR longitudinal shell weld J (100%)
007500, UT-10-132, PZR surge line nozzle (100%)
007901, UT-10-028, 13 SG lower head to tubesheet weld (67%)
006073, VE-10-026, CRDM TO VESSEL PENETRATION WELD, 4/12/10
008001, VE-10-027, 31-RCN-1130-IRS
008026, VE-10-028, 29-RCN-1130-IRS
009070, VE-10-030, 12-STG Channel Head Drain (100%)
033300, UT-10-027, 4-PS-1131-27 (100%)
033200, UT-10-029, 4-PS-1131-26 (100%)

033100, UT-10-032, 4-PS-1131-25 (100%)
032300, UT-10-033, 4-PS-1131-17 (100%)
031700, UT-10-040, 4-PS-1131-12 (100%)
032600, UT-10-034, 4-PS-1131-20 (100%)
047600, UT-10-045, 29-RC-1140-3 (100%)
051200, UT-10-048, 29-RC-1120-3 (100%)
203901, UT-10-047, 32-MSN-2111-1 (100%)
204001, UT-10-046, 16-BFN-2111-1 (70.64%)
210586, UT-10-025, 14-BF-2141-19 (100%)
210588, UT-10-024, 14-BF-2141-20 (100%)
836300, IWE: VT-10-338, PNL-S1-343-1
836400, IWE: VT-10-333, ALK-S1-100-tubing
840000, IWE: Vert Leak Channels 1 – 14
006073, VE-10-026, RPV Upper Head Inspection
006051, PT-10-004, CRDM Housing Weld Exams, penetrations #66, 67, and 72
Salem Unit 1, VT-2, Visual Examination Record, 12/14 AF FTTA, W.O. 60089848, 4/26/10 (VT)
Salem Unit 1, VT-2, CA Repair Snoop Test, W.O. 60089575, 4/27/10
Salem Unit 1, UT, W.O. 60084266, Yard AF, 4/18/10
Salem Unit 2, UT, W.O.60089851, Exam of containment liner
Salem Unit 1, UT 1-SGF-31-L2 FW elbow below min. wall
Salem Unit 1, UT, W.O. 30176541, 1-SGF-31-L2 FW elbow below min. wall
Salem Unit 1, UT, W.O. 60084266, AFW
Order 50113214, ST 550D, Surveillance: ISI Perform PORV Check
Order 50118090, ST 550D, Surveillance: OPS Perform PORV Check
W.O. 60089848, VT-2 Visual Examination Record, 12/14 AFW in FTTA, 4/26/10
W.O. 941017262, Activity 02; Salem Unit 2, Excavate and Examine Auxiliary Feedwater Piping, 12/2/94
W.O. 60084266, UT Unit 1 AFW (thinnest area), 4/20/10
UT Analysis, Component 1-SGF-31-L2 (14" FW Elbow below Minimum wall), 4/10/10
W.O. 60089851, Unit 2 Containment Liner blister UT measurements, 4/21/10
W.O. 60086175, Unit 1 Containment corrosion 78' elevation
W.O. 60084266, Unit 1 AFW piping UT measurements, 4/12/10
W.O. 30176541, Unit 1 AFW piping UT measurements, 4/12/10
W.O. 60084266, Unit 1 AFW piping UT measurements, 4/7/10
W.O. 60084266, Unit 1 AFW piping UT measurements, 4/5/10
W.O. 60084266, Unit 1 AFW pipe UT measurements at supports, 4/18/10
W.O. 30176541, Unit 1 CA piping UT measurements in FTTA
401600, VE-04-198; Hope Creek system pressure test CST to HPCI/RCIC and Core Spray, 11/5/04
VT-2, Salem Unit 1 AF 12 & 14 Pressure Test, 4/25/10
W.O. 60089661, UT measurements, Unit 2 AFW Piping #24 in FTTA, 4/25/10
W.O. 60089661, UT measurements, Unit 2 AFW Piping #22 in FTTA, 4/26/10

Eddy Current Testing Personnel Qualification Records

A2421
B8731
B0500
B5127
B5128
B2576
F3961
C1560
D7895
D9573
D6502
H2039
K5380
M9460
E0427
M6664
B4260
A3502
J9815
P5436
M6042
B8589
B4014
G2573
V8530
W3368
M4305
B4052
K6975
G3910
H0268
L3025
P1465
B8079
G1756
C8071
6410058746
B5371
H2131
2909965330076

C2028
C4596
C3340
D3858
H6267
H0282
I4048
J1978
2010983302133
P6459
R0830
R1164
S0608
2509981330193
K5858
1007951330114
L9168
L4332
F7460
F0037
3107943330158
6206070744
6507061922
1803983330125
2709977301226
P5304
P4006
R4201

R6452
R8002
S7752
T8251
V3197
R4142
R6279
G3380
B3720
R6900
A9608
N2574
I3805
T2170
N4815
M0945
P2963
M9715
K1903
D5318
W6070
M5096
J1945
L4588
C8042
N5330
L8267
F3453

T5616
R9311
G4943
C5542
F0075
F6623
F3453
G4943
G1311
H7791
J9141
M0950
M2665
M7006
M9459
M7007
M9082
N7035
N9952
R9311
S9098
T5616
T5565
W2639
W7912

Engineering Analyses & Calculations & Standards

Calculation 6SO-1882, Revision 1, 8/30/96; Qualification of Safety-Related Buried Commodities For Tornado Missle and Seismic Evaluation
Calculation No. S-C-AF-MDC-1789; Salem Auxiliary Feedwater Thermal Hydraulic Flow Model, 10/4/00
70087436, Steam Generator Degradation & Operational Assessment Validation, Salem Unit 1 Refueling Outage 18 (1R18) & Cycles 19/20, 9/2008
51-9052270-000, Update – Salem Unit 1 SG Operational Assessment At 1R18 For Cycles 19 and 20, 10/1/08
51-9048311-002, Salem Unit 1 SG Condition Monitoring For 1R18 And Preliminary Operational Assessment For Cycles 19 and 20, 10/30/07
701086998-0050, Maximum Pressure in Underground Auxiliary Feedwater Piping
60089575-130, Past Operability Determination for the leak in the one inch air line to air operated valves in Unit 1 South Penetration Area
70109233/20459231; Boric Acid evaluation of leakage from S1CVC-1CV277
70109232/20459230; Boric Acid evaluation of leakage from S1CVC-1CV2
70109230/20459228; Boric Acid evaluation of leakage from S2RC-1PS1
70109234/20459232; Boric Acid evaluation of leakage from S1SJ-13SJ25
70108698/30, Operating Experience Report for degraded Unit 1 AFW piping
51-9135923-000, AREVA; Salem unit 1 SG Condition Monitoring For 1R20 and Preliminary Operational Assessment For Cycles 21 And 22, 4/20/10
SA-SURV-2010-001, Revision 1; Risk Assessment of Missed Surveillance – Auxiliary Feedwater discharge line underground piping pressure testing, 4/23/10
CQ9503151526; SCI-94-0877, EXCAVATED AUXILIARY PIPING WALKDOWN/DISPOSITION OF COATING REQUIREMENTS; 12/16/94
Specification No. S-C-M600-NDS-019, COATINGS INTERIOR/EXTERIOR SURFACES CARBON STEEL SERVICE WATER PIPING, NO. 12 COMPONENT COOLING HEAT EXCHANGER ROOM AUXILIARY BUILDING (ELEVATION 84)
Structural Integrity Associates, Inc. Calculation File No. 1000494.301, Evaluation of Degraded Underground Auxiliary Feedwater Piping (Between Unit 1 FTTA and OPA), 4/23/10
Technical Evaluation 60089575-0140, Acceptability of CA Piping in the Fuel Transfer Area, 4/29/10
Technical Evaluation 60089848-0960, Auxiliary Feedwater Piping Missle Barrier Exclusion, 4/29/10
Structural Integrity Associates, Inc. Calculation File No. 1000498.301, Evaluation of Thinned Feedwater Elbow, 4/22/10
Technical Evaluation 70108698-0050, Maximum Pressure in Underground Auxiliary Feedwater Piping, 4/29/10
SPECIFICATION NO. S-C-MPOO-MGS-0001, Piping Schedule SPS54 AUXILIARY FEEDWATER, Revision 6
OpEval. #10-005, Salem Unit 2 Operability Evaluation, Received 5/18/10
Technical Evaluation 60084266-105-20, Alternative Exterior Coatings for Buried Piping, AF, CA, SA and Pipe Supports Under W.O. 60084266, 4/2/10
Technical Evaluation H-1-EA-PEE-1871, Hope Creek Service Piping Coatings Alternatives, 80075587, Revision 0, 10/15/04
PSEG Nuclear, LLC, Technical Standard, Coating Systems and Color Schedules, Revision 5, 4/3/06

Weld Records – AFW Piping Repair (W.O. #'s 60084266, 60089561, 60089798, 60089848)

Multiple Weld History Record: 74626
Multiple Weld History Record: 74556
Multiple Weld History Record: 74557
Multiple Weld History Record: 74558
Multiple Weld History Record: 74559
Multiple Weld History Record: 74560
Multiple Weld History Record: 74561
Multiple Weld History Record: 74562
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Multiple Weld History Record: 74569
Multiple Weld History Record: 74599
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Multiple Weld History Record: 74630
Multiple Weld History Record: 74622
Multiple Weld History Record: 74578
Multiple Weld History Record: 74596
Multiple Weld History Record: 74601
Multiple Weld History Record: 74602
Multiple Weld History Record: 74603
Multiple Weld History Record: 74604
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Multiple Weld History Record: 74598
Multiple Weld History Record: 74606
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Multiple Weld History Record: 74610
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Multiple Weld History Record: 74623
Multiple Weld History Record: 74622
Multiple Weld History Record: 74621
Multiple Weld History Record: 74537
Multiple Weld History Record: 74538
Multiple Weld History Record: 74537
Welder Stamp Number: P-664
Welder Stamp Number: P-65
Welder Stamp Number: P-466
Welder Stamp Number: P-57
Welder Stamp Number: E-64
Welder Stamp Number: P-710
Welder Stamp Number: P-207
Welder Stamp Number: P-666
Welder Stamp Number: P-708
Welder Stamp Number: E-89
Welder Stamp Number: P-84
Welder Stamp Number: P-228
Surface Exam Record: 60089561-0041
Surface Exam Record: 60089848-0001
Surface Exam Record: 60089848-0001
Surface Exam Record: 60089561-0041
Surface Exam Record: 60089561-0860

Miscellaneous Documents

Salem Unit 1 & Salem Unit 2 Technical Specification, 3.4.11 STRUCTURAL INTEGRITY, ASME CODE CLASS 1, 2 AND 3 COMPONENTS

Electric Power Research Institute (EPRI), Steam Generator Integrity Assessment Guidelines, Technical Report 1012987, Revision 2, July 2006

NRC Letter dated 3/11/91; FIRST TEN-YEARINSPECTION INTERVAL, INSERVICE INSPECTION PROGRAM RELIEF REQUEST, SALEM NUCLEAR GENERATING STATION, UNIT 1 (TAC NOS. 66013 AND 71101)

PSEG Nuclear, Salem Unit 1 & 2 Alloy 600 Management Plan, Long Term Plan (LTP), Revision 2, 10/15/09

Salem Unit 1 – Buried Piping Risk Ranking

MPR Associates Report, Technical Input To Operability of Potential Containment Liner Corrosion, Revision 0, 10/30/09
Transmittal of Design Information #S-TODI-2010-0005, 4/20/2010
Transmittal of Design Information #S-TODI-2010-0004, 4/16/2010
OQ950315126, PSEG ltr. Dated 12/16/94; Excavated Auxiliary Feedwater Piping Walkdown/Disposition of Coating Requirements
PSEG letter LR-N07-0224 dated 9/13/2007; REPLY TO NOTICE OF VIOLATION EA-07-149
UNTAGGING WORKLIST 4274446, 14 AF Underground Piping 1R20, 4/30/10
UNTAGGING WORKLIST 4274351, 12 AF Underground Piping 1R20, 4/30/10

## LIST OF ACRONYMS

| | |
|---|---|
| ASME | American Society of Mechanical Engineers |
| BAST | Boric Acid Storage Tank |
| CEA | Control Element Assembly |
| CEDM | Control Element Drive Mechanism |
| CFR | Code of Federal Regulations |
| EDG | Emergency Diesel Generator |
| EPRI | Electric Power Research institute |
| EQ;ACE | Equipment Apparent Cause Evaluation |
| EQ | Environmental Qualification |
| ER | Engineering Request |
| FTTA | Fuel Transfer Tube Area |
| IMC | Inspection Manual Chapter |
| IP | Inspection Procedure |
| IR | NRC Inspection Report |
| LER | Licensee Event Report |
| LOCA | Loss of Coolant Accident |
| MT | Magnetic Particle Testing |
| MSIP | Mechanical Stress Improvement Process |
| NCV | Non-cited Violation |
| Notification | Corrective Action Notification |
| NRC | Nuclear Regulatory Commission |
| NDE | Nondestructive Examination |
| OE | Operating Experience |
| PDI | Performance Demonstration Initiative |
| PI&R | Problem Identification and Resolution |
| PSEG | Public Service Electric & Gas, LLC |
| PWSCC | Primary Water Stress Corrosion Cracking |
| PQR | Procedure Qualification Record (Welding Procedures) |
| RCS | Reactor Coolant System |
| RT | Radiographic Test (Radiography) |
| PT | Dye Penetrant Testing |
| SDP | Significance Determination Process |
| SE | Safety Evaluation |

| | |
|---|---|
| SG | Steam Generator |
| SI | Stress Improvement |
| SSC | Structure, System, and Component |
| TS | Technical Specifications |
| UT | Ultrasonic Test |
| UFSAR | Updated Final Safety Analysis Report |
| VT | Visual Examination |
| WPS | Weld Procedure Specification |

**INSPECTION SAMPLE COMPLETION STATUS**

| **PROCEDURE or TI** | **MINIMUM REQUIRED SAMPLES** Annual (A) Biennial (B) | **CURRENT INSPECTION SAMPLES** | **RPS TOTAL SAMPLES TO DATE** | **PROCEDURE STATUS OPEN (O) CLOSED (C)** | **RPS UPDATED** (Y) (N) |
|---|---|---|---|---|---|
| **7111108 (G)** | 1 | | | | Y |
| 2515/172 | 1 | | | | YES |

**Attachment B-1**

**TI 172 MSIP Documentation Questions Salem Unit 1**

Introduction:

The Temporary Instruction (TI), 2515/172 provides for confirmation that owners of pressurized-water reactors (PWRs) have implemented the industry guidelines of the Materials Reliability Program (MRP) -139 regarding nondestructive examination and evaluation of certain dissimilar metal welds in the RCS containing nickel based Alloys 600/82/182. This TI requires documentation of specific questions in an inspection report. The questions and responses for MSIP for the IR 05000311/2009005 section 4OA5 are included in this Attachment "B-1".

In summary the Salem Units 1 and 2 have MRP-139 applicable Alloy 600/82/182 RCS welds in the four hot and four cold leg piping to reactor pressure vessel nozzle connections for each plant.

For Unit 1 during the 1R20 refueling outage in April 2010 PSEG inspected one dissimilar metal weld, a SG channel head drain line weld. No indications were reported from this inspection. PSEG plans on replacing this valve, and the dissimilar metal weld, during refueling outage 1R22.

TI 2515/172 requires the following questions to be answered for MRP-139 MSIP inspections:

Question 1: For each mechanical stress improvement used by the licensee during the Salem U1 1R20 outage, was the activity performed in accordance with a documented qualification report for stress improvement processes and in accordance with demonstrated procedures?

Response Question 1: No MSIP activities were conducted on U1 during 1R20.

Question d.1: Are the nozzle, weld, safe end, and pipe configurations, as applicable, consistent with the configuration addressed in the stress improvement (SI) qualification report?

Response – Question d.1: No MSIP activities were conducted on U1 during 1R20.

Question d.2.: Does the SI qualification report address the location radial loading is applied, the applied load, and the effect that plastic deformation of the pipe configuration may have on the ability to conduct volumetric examinations?

Response Question d.2: No MSIP activities were conducted on U1 during 1R20.

Question d.3.: Do the licensee's inspection procedure records document that a volumetric examination per the ASME Code, Section XI, Appendix VIII was performed prior to and after the application of the MSIP?

Response: Question d.3.: No MSIP activities were conducted on U1 during 1 R20.

Question d.4.: Does the SI qualification report address limiting flaw sizes that may be found during pre-SI and post-SI inspections and that any flaws identified during the volumetric examination are to be within the limiting flaw sizes established by the SI qualification report?

Response: Question d.4.: No MSIP activities were conducted on U1 during 1 R20.

Question d.5.: Was the MSIP performed such that deficiencies were identified, dispositioned, and resolved?

Response Question d.5.: No MSIP activities were conducted on U1 during 1 R20.