U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-206/89-03

Docket No. 50-206

License No. DPR-13

Licensee: Southern California Edison Company P. O. Box 800 2244 Walnut Grove Avenue Rosemead, California 91770

Facility Name: San Onofre Nuclear Generating Station Unit 1

Inspection at: San Clemente, California

Inspection Conducted: January 9-20, 1989

Inspector:

C. Clark, Reactor Inspector

Richards, Chief

Engineering Section

Approved by:

Date Signed

Signed

Inspection Summary:

Inspection During the Period January 9-20, 1989 (Report No. 50-206/89-03)

<u>Areas Inspected</u>: A routine announced inspection of Unit 1 Inservice Inspection (ISI) activities. Inspection procedures 30703, 73051, 73052, 73753, and 73755 were covered during this inspection.

Results:

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<u>General Conclusions and Specific Findings</u>: While the licensee's basic ISI program appeared to be adequate in the areas reviewed, the inspector had two concerns. First, the licensee is performing inspections with new/replacement UT calibration blocks, that do not always have documentation readily available to verify they have received an acceptable evaluation that they are equal to the original calibration blocks. Second, the licensee's ISI procedures do not appear to incorporate requirements for the same timely reviews in all cases, for potential or actual nonconforming items found during ISI examinations, that other non-ISI licensee procedures do provide. It appears that additional management attention is required to ensure that nonconforming items identified on systems in service receive appropriate and timely documented identification and evaluation.

890228003**7** 890210 PDR ADOCK 05000206 PDR ADOCK 05000206 Significant Safety Matters: None

Summary of Violations: One (paragraph 4.b)

<u>Open Item Summary</u>: One new unresolved item (paragraph 4.a.(2)) was identified during this inspection.

DETAILS

1. Persons Contacted

a. Licensee Personnel

- *C. McCarthy, V.P./Site Manager
- *H. Morgan, Station Manager
- D. Herbst, Quality Assurance (QA) Manager
- D. Stonecipher, Quality Control (QC) Manager
- *M. A. Wharton, Assistant Technical Manager
- *B. Katz, Manager O&MS
- *W. Lazear, QA Supervisor
- *C. Couser, Compliance Engineer
- *R. Baker, Compliance Engineer
- *G. Gibson, Senior Engineer
- *C. Harberts, Engineer I
- *R. Delong, Engineer I
- *J. Winter, Engineer
- *C. Brandt, QA Engineer
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- *G. McLandrich, Station Technical
- R. Sarouhan, QC

b. Contractor Personnel

- R. Hilterman, ISI Coordinator Westinghouse
- J. Westphall, Authorized Nuclear Inservice Inspector (ANII), Kemper Group
- * Denotes those personnel in attendance at the exit meeting on January 13, 1989.

The inspector also held discussions with other licensee and contractor personnel involved with inservice inspection activities.

2. <u>Inservice Inspection - Review of Program (73051)</u>

THe inspector performed a cursory review of the basis of the licensee's ISI program.

a. Program Organization

The Unit 1 original second ten-year interval ISI program is based on the requirements of the ASME code, Section XI, 1974 Edition, through the 1975 Summer addenda. A December 12, 1988 SCE memorandum for file from J. D. Boardman, identified that the licensee has upgraded visual (VT-1, VT-2, VT-3, and VT-4) inspection criteria for Unit 1 ISI to ASME Section XI, 1977 Edition, through the 1978 Summer addenda. The Unit 1 ISI program examination area summary sheets from manual M-38217, issued October 30, 1985, list the areas to be examined, the method and extent of the examination, calibration blocks required for some examination areas, and other useful information. The ISI program is established by Operations and Maintenance (O&M) support order SO123-IN-1, "Inservice Inspection Program", Revision 1 of July 30, 1987. The ISI program is implemented by O&M support procedure SO123-XVII-1, "Inservice Inspection Program Implementation", Revision No. 3, TCN No. 3-1 of December 5, 1988.

The ISI program is updated and revised by the licensee, per O&M support procedure S0123-XVII-1.1, "Inservice Inspection Program Maintenance", Revision 1 of January 26, 1988.

b. Quality Assurance Program

Topical Report, Quality Assurance Program SCE-1-A, Amendment 11 dated July 1988, addresses QA involvement in the ISI program. Discussions with the QA audit group and the surveillance group, identified that there had been two recent surveillances of ISI activities, but the reports were not issued yet. The licensee site QA management did identify that they were starting an audit of Unit 1 ISI activities, with an entrance meeting scheduled for January 11, 1989. The audit is scheduled for approximately three weeks. A preliminary copy of audit report no. SCES-001-89 identified that the purpose of the audit is to determine if certain discrepancies (i.e. wrong material thickness on code data reports; drawing inconsistencies regarding ISI supports; calibration block inconsistencies) identified during the current Unit 1 outage are representative of generic problems with the Unit 1 ISI program.

c. <u>Program Interval Extension Approval</u>

In a letter dated October 11, 1988 from C. M. Trammell (NRC) to K. P. Baskin (SCE), the NRC agreed with the licensee's extension of the second ten-year interval for Inservice Inspection (ISI), due to long outages of the unit during this current ISI interval. The end of the current ISI interval was extended from December 31, 1987 to November 30, 1991.

No violations or deviations were identified in the areas reviewed.

3. <u>Inservice Inspection -</u> Review of Procedures (73052)

A sample of the latest revisions of applicable ISI procedures, issued since the last ISI review, were reviewed by the inspector to assure compliance with the ISI program. All the reviewed procedures specified qualification and certification of NDE personnel, where applicable. The methods of recording, evaluating, and dispositioning normal ISI findings and reporting requirements were addressed in the applicable procedures in accordance with the applicable code requirements. The technical content, such as, method of examination, extent, and technique, were adequately described in conformance with the requirements and guidance of the ASME Code, Section V. One weakness identified during this procedure review was that some procedures, such as SO1-W-ISI-206, Rev. 0, "Manual Ultrasonic Examination of Welds", dated December 17, 1985, did not address how a non-ISI related nonconformance should be

documented/reported by an ISI contract examiner. Procedure SO1-W-ISI-206, Rev. 0 is a Westinghouse Nuclear Service Integration Division - inspection services nondestructive examination procedure (ISI-206, Rev. 1), which the licensee has approved and incorporated into their site procedures. This procedure is used on site by the Westinghouse Contract ISI examination group to perform ISI examinations. In one example, discussed in paragraph 4 of this report, the Westinghouse ISI group identified an eight inch diameter residual heat removal (RHR) pipe that was schedule 120 (nominal wall thickness 0.718 inch) instead of the schedule 160 (nominal wall thickness 0.906 inch) identified on applicable site design documentation. According to the contractor ISI personnel interviewed, their standard practice is to provide the results of inspections to the licensee's technical staff and that the licensee then determines whether a Nonconformance Report (NCR) should be written. It is a fundamental principle of nuclear plant operations that any individual may identify and document potential nonconforming conditions. Paragraph 6.2.1.2 of procedure S0123-XV-5 (Rev. 2, TCN 2-7) states in "Any individual may identify a perceived nonconforming condition". part: Therefore the ISI examiner should have written a nonconformance report documenting the condition at the time of discovery.

The Westinghouse ISI examiner did document the observed nonconformance condition on an information only sketch, which was provided to the licensee ISI engineer for Unit 1, but it was over a week until a licensee NCR was written to document this nonconforming condition. The RHR system was in service at this time, with an installed pipe wall thickness less than design requirements. The identification of this nonconformance was recognized later as an item that could affect plant restart. A similar problem with licensee responses to ISI examiner identified nonconformances was discussed in inspection report 50-362/87-03. Based on the above information the inspector concluded that the licensee needs to provide additional procedure instructions to their contract ISI examiners to ensure that all nonconformance conditions identified during ISI examination work on site, is immediately documented in a nonconformance report, and then promptly evaluated by the licensee.

See paragraph 4.b for additional information.

No violations or deviation were identified in the areas reviewed.

4. Inservice Inspection - Observation of Work and Work Activities (73753)

During the inspection the licensee was conducting the Unit 1 cycle 10 refueling outage, which is the second outage of the second period of the second ten year ISI interval. The contractor ISI examiners were provided by Westinghouse.

The inspector reviewed the qualification and certification records for the ISI examiners. The inspector observed available UT examinations performed on the pressurizer. No problems were identified in the above areas.

During this inspection, the inspector raised the following issues regarding the licensee's ISI program.

a. Loss of UT Calibration Blocks/Standards

(1) Steam generator examinations scheduled for January 10, 1989, were delayed due to the temporary loss of the applicable UT calibration block (UT-7). The loss of UT calibration blocks appears to be a long term problem at this facility, since several UT calibration blocks for units 1, 2 and 3 have been lost since the performance of preservice examinations and the start of the ISI programs for these units. In the past, the control of the ISI UT calibration blocks has been under the ISI engineering group and other licensee groups. There was no detailed licensee procedure in the past describing how to control and store ISI UT calibration blocks. These groups have had problems obtaining and maintaining secured storage areas for the ISI calibration blocks between ISI examinations.

The licensee has identified that the loss of control of ISI calibration blocks/standards has caused ISI inspection delays and additional ISI expenditures. The licensee issued Temporary Change Notice (TCN) No. 3-1 to Revision No. 3 of licensee procedure S0123-XVII-1, "Inservice Inspection Program Implementation", on December 5, 1988, to transfer responsibility for calibration blocks to the licensee Measuring and Test Equipment (M&TE) group. At the time of this inspection, the ISI UT calibration blocks were not under M&TE control. The formal turnover of ISI UT calibration blocks is scheduled to occur after the completion of the present Unit 1 cycle 10 refueling outage.

The control of ISI UT calibration blocks will be reviewed during future NRC inspections in this area, to ensure they are handled in accordance with the instructions in licensee procedure S0123-11-1.0, Revision 1, TCN 1-11, "Calibration and Control of Measure and Test Equipment" and/or other applicable documents.

The loss of the original ISI UT calibration blocks required the (2)licensee to obtain replacement UT calibration blocks. The acceptability of the replacement UT calibration blocks has to be verified and documented. The licensee was able to provide documentation of acceptability for some of the new replacement UT calibration blocks. A licensee memorandum from D. O. Henry to K. L. Collins, dated February 7, 1986 (for UT calibration block UT-7) and nonconformance report (NCR) S01-P-6795 for UT calibration blocks obtained from the Indian Point (ISI Sketch No. IPP-171, Rev. 3) and Trojan (DWG. No. POR-1-10-3, Rev. 0) facilities were two examples of documentation available for the latest Unit 1 replacement UT calibration blocks. As an example where acceptable documentation was not available, the inspector identified that UT calibration block no. 50115 was used during the 1979 outage ISI examination of RHR line 5002 (sketch ISI-1-14A), and that during this 1988/89 outage. UT calibration block no. SCE-006 was scheduled for use. The licensee could not provide documentation that an engineering evaluation for

the replacement of block no. 50115, with block SCE-006, had been performed, but the licensee stated they would review their records for the applicable documentation.

It was also identified during this outage that block no. SCE-006 had been lost, and was not available for ISI examination of weld no. 5002-7 in RHR line 5002. The ISI engineering group provided verbal instructions to the Westinghouse ISI examiners to use UT calibration block UT60 from the SONGS Unit 2/3 calibration standards as a replacement block. When asked by the inspector to provide documentation for this UT calibration block substitution, the licensee stated that data for both UT calibration blocks had been reviewed and evaluated, but that the evaluation had not been documented. The licensee stated that because of the nonconformance identified with RHR line 5002 wall thickness, the ISI examination of weld no. 5002-7 was not going to be performed this outage, and instead would be delayed until a later outage. On January 19, 1989 the ISI group located the missing SCE-006 UT calibration block.

Since the licensee is performing an audit of Unit 1 ISI activities per Audit Report No. SCES-001-89, the question of documentation of an engineering evaluation for replacement UT calibration blocks and the control of UT blocks will be carried as an unresolved item (50-206/89-03-01). To close this item, the licensee will have to provide documentation that they have performed an evaluation for acceptance of each new/replacement UT calibration block used since the pre-service examinations.

b. RHR Line 5002-Wall Thickness Nonconformance

During this outage the UT calibration block scheduled for the ISI examination of RHR line 5002, block SCE-006, could not be located for the scheduled ISI examination of weld 5002-7. This calibration block was later found on January 19, 1989. The licensee verbally identified Unit 2/3 calibration block no. UT60 as an acceptable replacement calibration block. As discussed above, the inspector considered acceptance of the replacement calibration block without a documented review to be poor performance of technical work.

The program examination summary sheet (no. 30) from manual M-38217 identifies weld no. 5002-7 as a eight inch pipe to valve weld, with an approximate weld thickness of 0.75 inches. On January 3, 1989 a Westinghouse ISI examiner performed a UT wall thickness measurement of RHR line 5002 for information and verification of actual wall thickness, adjacent to weld no. 5002-7, and identified an approximate wall thickness of 0.675 inches. This appeared to indicate schedule 120 pipe was installed in this section of the RHR system, when the ISI examiners normally expected to find schedule 160 pipe in this area. The Westinghouse ISI group reviewed the "letdown and RHR systems" P&ID, No. 5178030, Rev. 8, dated January 25, 1988, which identified RHR line 5002 as eight inch BH2 piping. The licensee's BH2 piping is identified as seamless A312 type 316 schedule 160. A review of the ASME code data form P-4A, provided by Bechtel (in 1967) for this RHR piping, identified line 5002 as: material A.S.T.M. A-312-TP-316, eight inch sch. 160. Since schedule 120 piping has a nominal wall thickness of 0.718 inches and schedule 160 piping has a nominal wall thickness of 0.906 inches, the initial Westinghouse ISI wall thickness measurements indicated the installed RHR piping was schedule 120 piping. On January 4, 1989 the Westinghouse ISI examiner reverified the UT wall thickness measurements, and provided an information only sketch to the licensee that identified that the existing wall thickness of line 5002 varied from 0.672 to 0.678 inch in the accessible areas checked. The ISI engineering group requested QC and station technical to evaluate this identified condition.

When the inspector became aware of the subject nonconforming condition on January 10, 1989, the inspector requested a copy of the licensee NCR, since it appeared the plant had identified an unanalyzed condition that could potentially compromise plant safety. The licensee notified the inspector that an NCR had not been written yet, that the licensee was planning on removing additional piping insulation from RHR line 5002, and performing additional UT wall thickness measurements on this line prior to determining if an NCR was required.

The inspector notified the licensee that an NCR should have been written when they were first notified by the ISI examiners on January 4, 1989, that a nonconforming condition existed in the RHR system. The inspector requested the licensee to identify what schedule piping/wall thickness was used to perform the piping installation stress and seismic calculations, since this system was in service with a potential unanalyzed condition. Later at the exit on January 13, 1989, the licensee identified that schedule 160 pipe had been used for the original stress and seismic calculations. The licensee identified to the inspector that the licensee was performing the additional UT wall thickness measurements and a review of the actual schedule of pipe (wall thickness) used to perform the original piping installation stress and seismic calculations per verbal instructions, and that there were no documented instructions issued to perform this evaluation process.

The licensee performed the additional UT wall thickness measurements on RHR line 5002 on January 11, 1989. NCR No. S01-P-6896, Rev. 0 was issued on January 12, 1989, to document that the latest piping wall thickness measurements varied from 0.664 to 0.914 inches and indicated schedule 120 pipe was installed, instead of the design schedule 160 piping. On January 12, 1989, the inspector requested the licensee to identify what actions they were going to take to ensure there was no other schedule 120 piping installed in the RHR system or other associated systems, where design documents indicated schedule 160 pipe should be installed. The licensee responded that they were planning on removing piping insulation from an adjacent six inch diameter RHR line and performing UT wall thickness measurements to verify it was schedule 160 piping. Depending on the results of the six inch diameter RHR line inspection, the licensee would determine if additional piping inspections were required. As of the January 13, 1989 exit, the licensee had not issued any documented instructions for additional inspections. The licensee also identified that a preliminary engineering design review indicated the installed schedule 120 piping in RHR line 5002 appeared to be acceptable as is.

Paragraph 6.3.11 of 0&M Support Procedure S0123-XVII-1, Rev. 3, "Inservice Inspection Program Implementation", states in part: "Nonconforming conditions...shall be reported in accordance with reference 2.3.12 (Licensee Procedure S0123-XV-5.0, "Nonconforming Material, Parts or Components"). Operability assessments shall be accomplished in a timely manner depending on existing plant operational mode."

The licensee General Procedure S0123-XV-5, Revision 2, TCN 2-7, "Nonconforming Material, Parts or Components," provides the following information in the paragraphs/attachments identified below:

- Paragraph 6.2.1.1 states: "Nonconforming conditions shall be documented by use of the NCR form (Attachment 4)."
- A paragraph 6.2.2 note states in part: "Validation of an NCR should normally occur within 24 hours...."
- Paragraph 6.4.1.1 states in part: "Concurrent with validation, STEC is responsible for determining equipment operability, further actions to be taken to ensure plant safety, and for documenting these conditions on the NCR."
- Attachment 1 to this procedure is entitled <u>"Conditions</u> <u>Required to be Documented on NCR"</u>, and Step 7 of this attachment identifies an NCR condition as, "Items found not to be in accordance with purchases orders, specifications or other design disclosure documents that are in use in the plant."

The licensee has implemented 10 CFR Part 50 Appendix B, Criterion V, per section 17.2.5 of the licensee Quality Assurance Program SCE-1-A, Amendment 11, which states in part: "Activities affecting quality are prescribed by, and accomplished in accordance with appropriate instructions, procedures and drawings." The failure of the licensee to issue an NCR prior to January 12, 1989, when the nonconforming RHR piping installation was identified on January 4, 1989, is an apparent violation (50-206/89-03-02).

The intent of an NCR is to identify and document an existing or perceived nonconforming condition, such that it can be evaluated and/or investigated in a documented control manner. The RHR system was in service at various times during this outage, and should have received an immediate documented operability assessment that it was acceptable for operation with schedule 120 pipe installed in RHR line 5002, instead of the schedule 160 piping required by design documents. An NCR would have generated an immediate documented operability assessment of the identified nonconforming condition. It appears that additional management attention is required in this area to ensure identified nonconforming items in a system in service receive immediate evaluations when nonconforming conditions are identified.

5. Inservice Inspection Data Review and Evaluation (73755)

The inspector reviewed all the available NDE ISI data sheets generated prior to and during this inspection.

No violations or deviations were identified in the areas reviewed.

6. Exit Meeting

The inspector met with licensee management representatives denoted in paragraph 1 on January 13, 1989. The scope of the inspection and the inspector's finding up to the time of the meeting were discussed. At this meeting the inspector identified that he had obtained some information that would be reviewed later in the Region, with the findings documented in this report. The information was reviewed and the finding included in paragraphs 3 and 4 of this report.