

Southern California Edison Company

P. O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

KENNETH P. BASKIN
VICE PRESIDENT

TELEPHONE
818-302-1401

September 8, 1987

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Dear Sir:

Subject: Docket No. 50-206
Reply to Notice of Violation
San Onofre Nuclear Generating Station, Unit 1

Reference: Letter, Mr. A. E. Chaffee (NRC) to Mr. Kenneth P.
Baskin (SCE), dated July 24, 1987

The reference letter forwarded NRC Inspection Report No. 50-206/87-10, 50-361/87-09 and 50-362/87-10 and a Notice of Violation resulting from routine inspection activities conducted by Mr. F. R. Huey, et. al., from April 4 through May 23, 1987. In accordance with 10 CFR 2.201, the enclosure to this letter provides the Southern California Edison (SCE) reply to the subject Notice of Violation. Per discussion between SCE's Mr. W. G. Zintl and Mr. D. F. Kirsch of Region V management, the due date of this response was extended to September 8, 1987.

The reference letter also requested that Southern California Edison address the broader aspects represented by this Inspection Report in the area of procedural adequacy, as well as the subject of Licensee Event Reports (LERs). In order to perform a thorough review and provide a complete response, SCE will provide these assessments under separate cover at a later date.

If you have any questions or require any additional information, please do not hesitate to call me.

Sincerely,

Kenneth P. Baskin

Enclosure

cc: Mr. J. B. Martin (USNRC Regional Administrator, Region V)
Mr. F. R. Huey (USNRC Senior Resident Inspector)

8709160167 870908
PDR ADOCK 05000206
Q PDR

IE01

ENCLOSURE

Response to the Notice of Violation contained in Appendix A of Mr. A. E. Chaffee's letter dated July 24, 1987.

ITEM I

Appendix A of Mr. Chaffee's letter states in part:

"A. 10 CFR 50, Appendix B, Criterion V, states:

"Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

"10 CFR 50, Appendix B, Criterion XII, states:

"Measures shall be established to assure that tools, gages, instruments, and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

"1. Chapter 1C of the licensee's Topical Quality Assurance Manual (TQAM) requires that quality affecting procedures include "appropriate qualitative and quantitative acceptance criteria, as applicable, to determine that designated activities are accomplished in a satisfactory manner.

Contrary to this requirement, on April 27, 1987, calibration procedure SOI-II-1.6.3 did not include acceptance criteria (in that allowed deviation from desired readings was not specified) for the data recorded by paragraphs 6.2.19 and 6.3.14 of the procedure. These data were required as part of the calibration of the startup rate meters and neutron level meters associated with source range nuclear instrument channel NIS-1201.

2. Chapter 5C of the licensee's TQAM states "measuring and test equipment used in the performance of safety-related activities shall be appropriately calibrated and controlled..."

Contrary to this requirement, on May 23, 1987, procedures S01-II-1.6.3 (Calibration of Source Range Startup Rate Channel N-2101) and S01-II-1.6.6 (Calibration of Intermediate Range Startup Rate Channel N-1204) did not require calibration of a ramp generator used for calibration of rate circuits in these channels, nor was the output of the ramp generator verified using calibrated measuring and test equipment.

"This is a Severity Level IV violation (Supplement I)."

RESPONSE

1. REASON FOR THE VIOLATION

The deficiencies noted above for the January performance of the Source Range Channel calibration were a result of two different causes: (1) the failure to express the acceptance criteria as a range, rather than as a single point value, in S01-II-1.6.3 was due to the lack of clarity in specifying that the value was expected to be exact; and (2) the failure to use properly calibrated equipment was an isolated deficiency in the M&TE program wherein the procedure, requiring the use of the ramp generator (which can not be calibrated), did not specify performance verification prior to safety-related usage. The specific facts and circumstances regarding these two instances are as follows:

A. Acceptance Criteria

SCE Procedures are written in accordance with S0123-VI-0.9 entitled "Documents - Author's Guide to the Preparation of Site Orders, Procedures and Instructions", which states that quantitative acceptance criteria should be expressed as ranges rather than as point values, when possible.

When S01-II-1.6.3 was written, it was expected that exact output values would be obtained for the data recorded by paragraph 6.2.19 and 6.3.14. The implied acceptance criteria were therefore ± 0 . A review of Maintenance Order (MO) 87011045001, however, revealed that data was being entered in the procedure (and approved as acceptable) which deviated slightly from the required value. SCE acknowledges that providing an acceptance range within the procedure is necessary in this case to allow for slight deviations in readings. A review of similar type procedures determined that this lack of a specified range is not a programmatic problem.

B. M&TE Ramp Generator

SCE's Measuring and Test Equipment (M&TE) program ensures that all equipment used in the performance of safety-related activities is appropriately calibrated and controlled. The ramp generator is a test instrument that provides a linearly changing D.C. output voltage over a fixed period of time, and was developed specifically to perform the calibration of the source range channels.

The ramp generator was constructed at San Onofre in accordance with the Westinghouse Vendor's manual. It consists of a synchronous motor direct coupled to a ten-turn potentiometer with limit switches that are used to prevent potentiometer over-travel. Since there are no adjustments, it can not be calibrated in the traditional fashion of M&TE. The output is purely a function of motor speed and input voltage.

The ramp generator was not included as M&TE in S01-II-1.6.3 and S01-II-1.6.6, because of the known accuracy of the variables determining the output. The input voltage is certified by using an M&TE calibrated digital voltmeter. Motor speed is a function of line frequency which on the Edison System is accurate to ± 0.05 percent. The combined accuracy of these variables is greater than the ± 3.0 percent accuracy requirement for startup rate indication as specified in the Unit 1 Final Safety Analysis (FSA).

SCE's use of this instrument was consistent with the vendor's technical manual, which required only that a regulated voltage be supplied to the ramp generator and did not require the output of the ramp generator to be monitored.

Although a traditional calibration can not be performed on the ramp generator, SCE acknowledges that a verification check prior to use is prudent, in order to verify that no degradation of inactive components has occurred.

2. CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

A. Acceptance Criteria

Procedure S01-II-1.6.3 has been revised to include appropriate acceptance criteria, to allow for minor fluctuations (+/- 3%) in the readings.

The Maintenance Procedure writers, responsible for these procedures, have been reinstructed in the use of Station Procedure S0123-VI-0.9, "Documents - Author's Guide to the Preparation of Site Orders, Procedures and Instructions" and the I&C/Electrical Test Procedures Author Guide, as related to acceptance criteria.

In addition, the Equipment QA Supervisor has issued a memorandum to all Equipment QA Engineers reemphasizing the need to review procedures during the review and approval process for the inclusion of acceptance criteria prior to QA approval. Training has been conducted with the Equipment QA Engineering Staff on the requirement to include acceptance criteria in procedures.

B. Ramp Generator

Instrument and Test Procedures S01-II-1.6.3 and S01-II-1.6.6 have been revised to include a series of steps which verify the ramp generator output. This is accomplished by connecting a chart recorder (which is included in the M&TE program) to the output of the ramp generator and verifying that the resultant recorded voltage changes at the correct linear rate. This section of the procedure is performed prior to use of the ramp generator for data collection.

3. CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

A. Acceptance Criteria

A program to review additional procedures had been initiated as a result of a QA Field Surveillance and resultant Problem Review Report (PRR) SO-078-87 (issued March 30, 1987). This program consisted of reviewing safety related I&C, Radiation Monitor, and Electrical Test Procedures to ensure that acceptance criteria are correctly specified for all quantitative data. This portion of the program has been completed and no programmatic deficiencies were identified. Those procedures which have been identified as requiring clarification of acceptance criteria will be revised by December 31, 1987.

B. Ramp Generator

Additional procedural reviews were performed, and it was determined that the ramp generator is utilized in several other SCE procedures. These procedures will also be revised by December 31, 1987 to ensure that ramp generator outputs are verified.

In addition, an investigation is being performed to ensure that no other unqualified test instruments are being used during the calibration of safety related equipment.

4. DATE WHEN FULL COMPLIANCE WAS ACHIEVED

Procedures SO1-II-1.6.3 and SO1-II-1.6.6 were revised by September 4, 1987 to verify the output of the ramp generator and to provide acceptance criteria ranges.

ITEM II

Appendix A of Mr. Chaffee's letter continues with:

"B. Paragraph 6.8.1 of the Unit 1 Technical Specifications, by reference to Regulatory Guide 1.33, requires procedures to be established, implemented and maintained for maintenance activities.

"Maintenance Procedure S0123-I-1.1, titled "Organization and Responsibilities of the Maintenance Section," requires activities to be accomplished in verbatim compliance with approved procedures (Paragraph 6.2.3.5) and requires procedures to be revised if additional actions are required (other than minor corrective maintenance) beyond those allowed by written work procedures (paragraph 6.2.3.5.3).

"Maintenance Procedure S0123-I-1.7, titled "Maintenance Order Preparation, Use and Scheduling," requires work to be done in verbatim compliance with approved procedures and documented instructions contained in the work packages (paragraphs 6.12.11 and 6.12.12) and requires that measuring and test equipment (M&TE) used during maintenance activities be recorded on applicable Maintenance Orders (paragraphs 6.12.7 and 6.12.19.5).

"Maintenance Procedure S01-II-1.6.3, titled "Source Range Channel N-1201 Calibration", specifies the requirements for performing calibration of source range nuclear instrument channel N-1201. Specifically:

"(1) Paragraph 6.1.15 and 6.2 require the use of a pulse counter during calibration of the discriminator and pulse log integrator circuits.

"(2) Paragraphs 6.3.12 and 6.3.13 require adjustment of the rod stop annunciator to alarm at 2.0 DPM.

"(3) Paragraphs 6.5.7 and 6.5.8 require calibration of Foxboro EMF converters NYV-2201 and NYI-2201.

"(4) Paragraph 3.2.1 identifies that the pulse generator, pulse counter and oscilloscope specified in paragraph 6.1.15 for calibration of the source range discriminator are M&TE.

"Contrary to the above, on January 17, 1987, during calibration of source range channel N-1201 per MO 87011045000/1, procedure S01-II-1.6.3 was not complied with in that:

"(1) A pulse counter was not used during calibration of the discriminator and pulse log integrator circuits.

"(2) Rod stop annunciator adjustments were not accomplished.

"(3) Calibrations of the Foxboro EMF converters NYV-2201 and NYI-2201 were not accomplished.

"(4) The pulse generator, pulse counter and oscilloscope were not recorded as M&TE on the Maintenance Order.

"This is a Severity Level IV violation (Supplement I)."

1. REASON FOR THE VIOLATION

Procedure S01-II-1.6.3 was written to perform the routine 18-month refueling interval calibration, with the unit in a sub-critical mode. In January 1987, with Unit 1 operating at 90% power, a problem occurred associated with the neutron level meter which prompted troubleshooting and repair activity. This procedure was utilized in troubleshooting and post-maintenance retest/calibration. Only those portions of the calibration procedure which were affected by the actual repair work done were to be implemented. Final operability determination was to be made by a separate Operations test.

SCE acknowledges that certain steps of S01-II-1.6.3 were not followed during the calibration of N-1201. The apparent root cause that led to this failure was that a number of the personnel involved (including technicians and supervision) failed to completely understand the Station's policy on procedural adherence. The individuals involved in this case felt that compliance with the "intent" of the procedure, using it more as a guide, was sufficient. Interviews of other technicians and supervisors in the same craft indicated that this was not the general perception, and that procedural compliance was clearly understood. Lack of attention to detail during the supervisor's review is also evident. SCE agrees that some of the procedural usage deviations stated above occurred, however they were minor infractions of administrative policy with no safety significance.

The specific facts and circumstances regarding the four instances are as follows:

(1) Pulse Counter not used during the calibration of the discriminator and pulse log integrator circuits

On January 17, 1987 an I&C technician was assigned to troubleshoot, repair, and perform post maintenance testing on source range channel N-1201 in accordance with MO 87011045001 using procedure S01-II-1.6.3. Steps 6.1.15 and 6.2, as well as the prerequisites, stated that the I&C technician was to obtain a pulse counter. While preparing for the job, the I&C technician realized that the oscilloscope, also used in the procedure, could be used to read the pulse repetition rate in lieu of the pulse counter.

The procedure had been written to use a pulse counter because it automatically provides a digital readout, whereas the oscilloscope reading must be converted by the technician. SCE administrative procedural controls do not permit unilateral equipment substitution. However, the I&C technician, who was knowledgeable in the use of M&TE, and had been trained to either (1) follow the procedure as written, or (2) stop and revise the procedure, decided to substitute the pulse counter with the oscilloscope, since the same quantitative measurement could be obtained with either instrument. The I&C technician did, in fact, obtain the correct data using the oscilloscope.

(2) Rod Stop annunciator adjustments were not accomplished (Steps 6.3.12 and 6.3.13)

This procedure was written to be performed during a refueling outage while the plant is in a shutdown condition. In the case cited, it was being used to aid in troubleshooting and in performing the post maintenance test. During power operation it is impossible to perform all the requirements of steps 6.3.12 and 6.3.13. One of the requirements of these steps could be (and was) performed. Consequently, the technician initialed the space provided to account for completion of a step.

As the procedure provided only a single sign-off to verify the performance of both steps, the technician performed a portion of the required steps, and signed off incorrectly. The technician and his direct supervisor failed to initiate a Temporary Change Notice (TCN) to the procedure which is what is required when a step can not be accomplished.

In further troubleshooting activities of this instrument, it became necessary to perform this part of the procedure again. Another technician performing the steps in question recognized that they could not be accomplished. He stopped work, initiated a TCN to the procedure, and proceeded to complete the calibration.

SCE acknowledges that the steps were confusing, and that the first technician and his supervisor should have recognized the need for the TCN. However, SCE identified the procedural problem before it was discovered by the NRC and took the necessary action. This was the first time that this procedure was utilized while the reactor was at power and therefore this anomaly was not previously identified.

(3) Calibrations of the Foxboro EMF converters were not accomplished (Steps 6.5.7 and 6.5.8)

The technician placed "N/A" in steps 6.5.7 and 6.5.8, and added a footnote to the procedure "Remarks Section", which said, "No problem with NYV-2201 and NYI-2201, Calibration not required, as directed by I&C Foreman".

As noted on page 7, only portions of the calibration procedure which were affected by the actual repair work were to be implemented. The supervisor in charge at the time recognized that the EMF converters were not affected by the work done, and therefore did not require calibration. As acting General Foreman, he has the authority to modify the work plan when necessary. Instead of giving verbal instructions to the technician to "N/A" these steps, he should have performed a "pen and ink" change on the maintenance plan. This is allowed by Maintenance Procedure SO123-I-1.7, "Maintenance Order Preparation, Use and Scheduling". The direction provided by the acting General Foreman in the performance of this maintenance activity was technically correct, however he did not follow the requirements of administrative procedures controlling this process.

(4) Recording of M&TE

The work associated with this maintenance activity required three revisions to MO 87011045000 and took several days to complete. The technician performing Revision 0 identified that the repair of the

instrument was not accomplished since it failed the operability verification test. For this reason, the MO was returned to Planning to be replanned and reworked. It was only after completion of revision 2 that this equipment was returned to service. All M&TE utilized in this work activity was appropriately documented in Revision 2.

SCE does not believe that the failure to record M&TE on Revision 0 is a violation of our Maintenance or M&TE program, however we do acknowledge that it would have been prudent to do so. SCE encourages technicians to verify and record M&TE for all activities performed.

2. CORRECTIVE STEPS TAKEN AND THE RESULTS ACHIEVED

The supervisor involved in this maintenance evolution has been counselled in accordance with SCE's disciplinary process.

Briefings have been held with all I&C technicians and supervisors, reemphasizing the Station's policy on procedural compliance.

In the case where the rod stop annunciator adjustments were not accomplished, procedure SOI-II-1.6.3 has been revised to limit procedural usage to Modes 3, 4, 5 and 6.

3. CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

The journeyman training program will include this citation in the next "recent plant events" review to provide an additional forum to emphasize procedural compliance.

4. DATE WHEN FULL COMPLIANCE WAS ACHIEVED

NIS-1201 was properly repaired and demonstrated operable on January 23, 1987.

8891F