

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-361/82-30, 50-362/82-26

Docket No. 50-361; 50-362 License No. NPF-10 Construction Permit No. CPPR-98
Safeguards Group _____

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

Facility Name: San Onofre - Unit 2, Unit 3

Inspection at: San Onofre Nuclear Generating Station, San Clemente, California

Inspection conducted: September 23 through October 25, 1982

Inspectors: *A. Chaffee*
100 A. Chaffee, Senior Resident Inspector, Unit 2

11/5/82
Date Signed

Date Signed

Date Signed

Approved by: *D. Kirsch*
D. Kirsch, Chief, Reactor Projects Section No. 3
Reactor Operations Projects Branch No. 2

11/5/82
Date Signed

Date Signed

Summary: Inspection on September 23, 1982 through October 25, 1982
(Report Nos. 50-361/82-30, 50-362/82-26)

Areas Inspected:

Routine, unannounced resident inspection of the Unit 2 Startup Test Program including the following areas: follow-up on inspector identified items; follow-up on items of noncompliance; operational safety verification; monthly maintenance observations; monthly surveillance observations; training; requalification training; review of plant operations; and independent inspection effort.

Routine, unannounced resident inspection of the Unit 3 Preoperational Test Program including the following areas: plant tour; reactor protection system test witnessing; operating staff training; and independent inspection effort.

This inspection involved 70 inspector hours by one NRC inspector.

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Of the 14 areas examined, one apparent item of noncompliance was identified (failure to properly administer operator overtime - paragraph 3, severity level V).

DETAILS

1. Persons Contacted - Units 1, 2, 3

- +H. Ray, Station Manager
- +B. Katz, Technical Manager
- +H. Morgan, Operations Manager
- +J. Wambold, Maintenance Manager
- +W. Moody, Deputy Station Manager
- +J. Curran, Manager, Quality Assurance
- +D. Schone, Units 2 & 3 Project Quality Assurance Supervisor
- +P. King, Units 2 & 3 Operations Quality Assurance Supervisor
- +C. Horton, Units 2 & 3 Startup Quality Assurance Supervisor
- +W. McRory, Units 2 & 3 Operator Training Administrator
- +G. Gibson, Unit 3 Lead Compliance Engineer
- +J. Iyer, Unit 2 Lead Compliance Engineer

The inspector also interviewed and talked with other licensee employees during the course of the inspection; these included shift supervisors, control room operators, startup engineers, and quality assurance personnel.

+Denotes those persons attending the exit interview on October 15, 1982. Also present at the October 15 exit interview was J. Stewart, Reactor Inspector.

2. Follow-up on Inspector Identified Items - Unit 2

- a. (Open) (OI-82-25-05) In-service Testing Program (Valves) - Position Indication Tests

The licensee stated that the needed corrective action in this area was more extensive than originally anticipated and has, therefore, extended the commitment date for completion from October 1, 1982 to November 1, 1982.

- b. (Open) (OI-82-25-06) In-service Testing Program (Valves) - Position Indication Retest Requirements

In conjunction with the above open item, the licensee has extended his commitment date to November 1, 1982. This item is closely tied to OI-82-25-05.

- c. (Open) (OI-82-25-03) Kerotest Valves/"Y" pattern valves and Reverse Flow Procedure Caution Statements

The licensee completed the study to identify which additional valves, other than the two previously identified in the auxiliary feedwater system, could be subjected to backflow conditions. The licensee committed to include caution statements regarding backflow through the sixteen valves in the necessary procedures by October 22, 1982.

3. Follow-up on Items of Noncompliance - Unit 2

(Closed) (OI-82-15-02) Overtime Guidance, Level IV

The inspector verified that the licensee had completed the corrective actions outlined in his response dated May 18, 1982.

The inspector also reviewed the monthly overtime reports from April through September 1982. This review identified two additional instances where the licensee had again violated license condition 2.C(19)b.

Operating License NPF-10 section 2.c(19)b states, in part:

- "1. SCE shall develop and implement administrative procedures to limit the working hours of individuals of the nuclear power plant operating staff who are responsible for manipulating plant controls or for adjusting on-line systems and equipment affecting plant safety which would have an immediate impact on public health and safety. Adequate shift coverage shall be maintained without routine heavy use of overtime. However, in the event that unforeseen problems require substantial amounts of overtime to be used, the following guidelines shall be followed:
2. An individual shall not be permitted to work more than 24 hours in any 48-hour period, not more than 72 hours in any seven-day period (all excluding shift turnover time).

Any deviation from the above guidelines shall be authorized by the station manager, his deputy, the operations manager, or higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation. Controls shall be included in the procedures such that individual overtime will be reviewed monthly by the station manager or his designee to assure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized."

Contrary to the above, one Unit 2 Senior Reactor Operator worked more than 72 hours between July 21 and July 27, 1982 and another Unit 2 Senior Reactor Operator worked more than 72 hours between August 4 and August 10, 1982 (both are seven day periods) without appropriate management authorization.

This is an apparent item of noncompliance.

The licensee has determined that the above violations resulted from the informal overtime management control system in existence prior to October 1, 1982. Effective October 1, 1982, the licensee has implemented a formal overtime management control system which consists of the following procedures:

Station Order S0123-A-139, Rev. 0, "NRC Overtime Restrictions"

Administrative Procedure S0123-VI-19.0, Rev. 0, "Deviation From NRC Excessive Overtime Guidelines"

Memorandum dated October 8, 1982 "Overtime Guidelines" from H. E. Morgan (Operations Manager)

It appears the additional corrective action, specifically the above procedures, will rectify the inadequacies in the licensee's original corrective action. Since the additional corrective action appears complete and has been implemented, no written response to the above item of noncompliance is required.

In light of the corrective action already taken, and the reduction in the number of individuals involved in this case as compared to the previous case, a severity level V appears appropriate.

The inspector will review the effectiveness of the licensee's new program during a subsequent inspection (OI-82-30-01).

4. Operational Safety Verification - Unit 2

a. The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators. The following items were noted:

- 1) The common control operator was using an obsolete revision of S023-5-2.24 "Miscellaneous Utilities 61-A". This procedure gives the corrective action for annunciators on panel 61-A. The licensee has non-controlled pink procedures at each control room panel for quick access by the operators. It appears the licensee does not have an effective system to assure that operators use effective procedure revisions at all times. The licensee is reviewing this situation for necessary corrective action (OI-82-30-02)
- 2) Various unlabelled panel indications were observed. The licensee has several design change packages outstanding to correctly identify panel indication labeling.

- b. The inspector verified the operability of selected emergency systems, reviewed tagout records, and verified proper return to service of affected components. Tours of the containment, safety equipment building, radwaste building, control building, diesel generator building, and the auxiliary feedwater building identified the following:
- (1) Oil accumulation in the diesel generator room, coolant charging pump rooms and auxiliary feedwater pump room.
 - (2) Smoking material in the diesel generator room and component cooling water surge tank room.

The above items were promptly cleaned up by the licensee. The licensee stated that emphasis in this area was continuing. The inspector will monitor the effectiveness of the licensee's housekeeping program during future inspections.

- c. The inspector noted the following in the fire protection area:
- (1) The Fire Barrier Patrol failed to perform his 1300 hourly tour in Fire Zone #22 (Auxiliary Feed Pump Room) on October 6, 1982. The inspector informed the licensee's Quality Assurance organization who in turn wrote Corrective Action Request S023P 264 on October 8, 1982. Further investigation by the licensee identified the following circumstances.

At approximately 1245 hours on October 6, 1982 the watch patrol for Zone #22, was relieved of his watch to attend to other duties. The fire watch coordinator at that time assigned another individual to provide coverage during the watch patrol absence. Apparently, the relieving watch was not instructed by his supervisor to cover Fire Zone #22, since the fire watch post bill was not initialed by him for the 1300 hour entry. All other areas were covered and initialed as required by the Fire Watch Training Manual.

The original watch returned to his posted rounds at approximately 1420 hours and initialed his watch bills. This included initialing the watch bill for the 1300 hour entry which his relief failed to initial.

The licensee effected the following corrective action:

- (a) The licensee's Fire Watch representative issued a memo to all fire barrier patrol personnel emphasizing the importance of proper documentation of tours.

- (b) The licensee is evaluating how to streamline the watch documentation system to highlight missed tours and reduce time spent in documenting tours.
- (c) The licensee's Quality Assurance organization issued Corrective Action Request (CAR) S023P-264. A response to this CAR is due November 15, 1982.

Since this appears to have been an isolated occurrence and all fire barriers were installed in Zone #22 (although one was under Engineering review for upgrade) no item of noncompliance will be issued. The effectiveness of corrective actions identified above will be examined during a future inspection. (OI-82-30-03)

- (2) Several water tight doors in the safety equipment building were labeled as Technical Specification fire doors when in fact they were not. The licensee has initiated an evaluation of door status in the plant to assure only Technical Specification fire doors are labeled as such.

The licensee estimates completion of this evaluation by October 22, 1982. This item will be reviewed at a subsequent inspection. (OI-82-30-04)

- d. The inspector, by observation and direct interview, verified that the physical security plan was being implemented in accordance with the station security plan.
- e. The inspector walked down the accessible portions of the shutdown cooling system to verify operability.
- f. The above reviews and observations were conducted to verify that facility operations were in conformance with the requirements established under Technical Specifications, regulations, and administrative procedures.

No items of noncompliance or deviations were identified.

5. Monthly Maintenance Observation

Station maintenance activities on safety related systems and components, listed below, were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, applicable industry codes or standards, and in conformance with Technical Specifications.

Pressurizer Spray Valve PV-100A, PV100B-TRIM modification and packing repair.

Replacement of Control Element (CEA) Drive Motoring on CEAs 86, 68, 38, and 77.

Repair of SIT Tank 10 check valve 043.

Repair of SIT Tank 10 nitrogen relief valve 2PSV 9376.

The following items were considered during this review: the limiting conditions for operations were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as required; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; and fire prevention controls were implemented.

No items of noncompliance or deviations were identified.

6. Monthly Surveillance Observation

The inspector observed technical specification required surveillance testing on the Nuclear Instrument Safety Channel B drawer (31 day interval), as specified by Procedure No. S023-II-5.6, and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were properly accomplished, that test results conformed with technical specification and procedure requirements, that test results were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel. The inspector also witnessed portions of the following test activities:

- . Shutdown Margin Calculation per procedure S023-3-29
- . Once a shift surveillance (Modes 5-6) per procedure S023-3-3.25.1
- . Monthly Nuclear Instrument Safety Channel A drawer test per procedure S023-II-5.5

The following items were noted:

- 1) Instrument JI-0001-1 was erroneously identified in procedure S023-II-5.5 as JI-0001A1. At this point in the procedure work was stopped and TCN-6 was issued that same day to correct this error before work recommenced. This item is closed.
- 2) The inspector noted that the Core Physics data book had not been fully updated to reflect the results of the low power physics testing which was completed on September 3, 1982. However, further investigation by the licensee identified that only the critical boron concentration curves were in need of updating. The licensee completed this activity on October 19, 1982. Further updates will occur as the power ascension program produces additional data (for example xenon).

No items of noncompliance or deviations were identified.

7. Operating Staff Training - Unit 3, Training Unit 2, Review of Plant Operations - Unit 2

The inspector reviewed the lesson plans for and attended the following training sessions:

- . Licensed operator training on Unit 2 and Unit 3 differences, sections II and III on September 24, 1982.
- . Nuclear Plant Equipment Operator (NPEO) Phase III.
- . Training on Excore Nuclear Instruments on October 5, 1982.
- . NPEO Phase II Training on Spent Fuel Cooling and Purification System on October 5, 1982.
- . Maintenance Craft Technical Staff Training on Limitorque operators on September 23, 1982.
- . Instrumentation and Control Training on the Foxboro spec 200 equipment on October 4, 1982.
- . Quality Assurance/Quality Control Training on source inspection on September 27, 1982.

The inspector noted the following:

- . the general level of instruction was excellent
- . training aides were put to good use when appropriate
- . the lectures were consistent with the lesson plans

No items of noncompliance or deviations were identified.

8. Requalification Training - Unit 2, Review of Plant Operations - Unit 2

The inspector reviewed the lesson plan for and attended the requalification lecture on Unit 2 and 3 differences. The technical content of this lecture appeared adequate.

No items of noncompliance or deviations were identified.

9. Independent Inspection Effort

a. Housekeeping

- (1) The inspector reviewed station order S0123-A-130 "Station Housekeeping and Cleanliness Control", Revision 0, dated May 6, 1982. Attachment A to this procedure establishes the station zone designations. The following discrepancies were identified:
 - (a) the safety equipment building is not addressed
 - (b) the control building and control room are erroneously designated as the temporary construction office building
 - (c) the auxiliary feedwater building is not addressed
 - (d) the tank building area is not addressed
 - (e) the diesel building and diesel generator building are both identified however, these are names for the same building

The licensee stated that the necessary changes will be included in Revision 1 to this procedure by November 15, 1982. (OI-82-30-05)

- (2) The inspector noted that the licensee project maintenance procedure MPMG206, Rev. 1, dated March 30, 1982 (Housekeeping and Cleanliness Control) is inconsistent with S0123-A-130 as follows:
 - (a) Exhibit C of MPMG206 designates several areas as being two different zone designations, rather than subdividing into smaller areas with one zone designation. S0123-A-130 designates the same large areas as one zone designation. Thus, there is no uniformity between these procedures. The licensee has stated his intention to require that S0123-A-130 be the controlling document. However, it is unclear as to which procedure will be used by the licensee's project organization to administer corrective maintenance. (OI-82-30-06)

b. Control Element Assembly Manipulation Using the Polar Crane while in Mode 5

Background: The licensee had experienced significant slipping and dropping problems with several Control Element Assemblies (CEA's) during August and September, 1982. The licensee subsequently opted to replace four of the malfunctioning CEAs. This was accomplished by cutting an omega seal in the pressure housing above each motor. The housing was then unscrewed exposing a four inch diameter hole and the CEA mechanism inside this hole. The licensee then replaced all four mechanisms and reinstalled three of the four pressure housings minus the omega seals. At this point the licensee planned to inspect for damage to the lands of the CEA extension shafts. CEA No. 86 had the worst performance record and was, therefore, selected. To perform this investigation the licensee determined he needed to withdraw the control rods a minimum of four feet to allow visual inspection of the lands.

The licensee performed this evolution in accordance with special procedure S023-SPE-2, Rev. 0, dated September 27, 1982 (CEA extension shaft inspection). This procedure was developed a few days prior to its actual use on September 28, 1982. The licensee also wrote an internal memorandum, between the Unit 2 Supervising Engineer and the Unit 2 Operations Superintendent, discussing the various merits of this evolution. This letter constituted the licensee's safety evaluation. It was not apparent from the content of the licensee's safety evaluation, that failure of the polar crane had been considered. Specifically, if the polar crane controls had failed in the outward motion mode the rod would continue to be withdrawn until the head was engaged. At this point some failure mode would result. The concern here is whether this failure mode could have resulted in fuel damage. The licensee, in response to the inspector's concerns, concluded that the CEA extension shaft coupling mechanism would break before the control element failed. Further, the licensee determined that the rodlets would still be inserted into the fuel element guide tubes when head engagement by the rod occurred. Thus, the rod would just fall back into the core with no fuel damage occurring. However, this determination had not been made prior to the performance of this evolution. Discussions with licensee personnel revealed that it was believed that no damage to the fuel could occur due to continuous rod withdrawal. The licensee did not feel the polar crane would fail to stop pulling the rod because of a dead iron switch on the polar crane controls. However, the licensee did agree that the failure mechanism identified by the inspector should have received a more formal documentation in the safety evaluation. However, the licensee stressed that a safe evolution was still the end result. The inspector emphasized the need for a complete safety evaluation report to

adequately demonstrate the licensee's total understanding of the safety significance of an evolution, particularly when the Technical Specifications are unclear regarding the evolution in question.

The inspector's examination of this evolution identified inconsistencies in the applicability of some of the limiting conditions for operation (LCO) in the refueling operations section of the technical specifications.

Some of the L.C.O.'s in this section would appear to be applicable at times other than during refueling operations. For example, L.C.O. 3.9.7 prohibits the movement of any load in excess of 2000 pounds above the spent fuel storage pool whenever fuel assemblies are stored in the pool.

However, if one assumes that L.C.O.'s in this section can be applicable during periods other than refueling operations, the following inconsistencies occur:

- (1) L.C.O. 3.9.6: This L.C.O. would not allow movement of CEA's with the control element drive motors at any time.
- (2) L.C.O. 3.9.10: This L.C.O. would require 23' of water on top of the core any time a CEA was moved.

Thus it appears that the applicability of the L.C.O.'s in the refueling operations section are not clear. This becomes particularly important in regards to L.C.O. 3.9.6. This L.C.O. does not allow the movement of the five finger CEA's within the reactor vessel with the polar crane. However, whether it is applicable only during refueling operations or at all times is not clear.

The licensee has committed to provide a technical specification amendment submittal to the NRC to clear up these inconsistencies (OI-82-30-07). The NRC's Office of Nuclear Reactor Regulation has been briefed on the pending submittal and will review the submittal for technical adequacy.

The Office of Nuclear Reactor Regulation is also reviewing the question as to whether this is an unreviewed safety question. This is because it is still not clear whether this type of activity, the movement of rods inside the core, should be performed in mode 5 or, in fact, should be performed in mode 6, where many additional precautions exist such as:

- (1) Modified containment integrity with
 - (a) Equipment hatch shut with a minimum of 4 bolts installed
 - (b) Personnel access hatch shut (one door minimum)
- (2) RCS boron concentration greater than 1720 ppm
- (3) Direct communications between the control room and personnel at the refueling station
- (4) A minimum of two source range flux monitors in operation
- (5) A Senior Reactor Operator inside containment in charge of activities

This is an unresolved item pending the completion of NRRs review. (01-82-30-08)

10. Plant Tour - Unit 3

The inspector toured Unit 3 and observed that housekeeping needed to be improved inside containment in preparation for fuel load. The licensee has increased his efforts in that area. The inspector observed that fire protection equipment appeared to be properly maintained and distributed. The inspector also spot-checked the adequacy of various testing activities in progress.

No items of noncompliance or deviations were identified.

11. Reactor Protection System Test Witnessing - Unit 3

The inspector observed selected portions of the Reactor Protection System preoperational test per procedure 3PE-357-01.

During the performance of this test the inspectors verified, on a selected basis, by observation and discussion with licensee personnel that those portions of the test observed were conducted using an approved procedure, test equipment was properly calibrated, test data were collected and recorded, and that the test adequately demonstrated conformance with applicable acceptance criteria.

No items of noncompliance or deviations were identified.

12. Independent Inspection Effort

The inspector observed selected portions of the shutdown cooling system test (3PE-225-04). During the performance of this test the inspector verified, on a selected basis, by observation and discussion with licensee personnel that those portions of the test observed

were conducted using an approved procedure, test equipment was properly calibrated, test data were collected and recorded, and that the test adequately demonstrated conformance with applicable acceptance criteria.

No items of noncompliance or deviations were identified.

13. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraph 9.

14. Exit Interview - Units 1, 2 and 3

The inspector met with licensee representatives (denoted in Paragraph 1) on October 15, 1982 and summarized the scope and results of the inspection. The licensee made the commitments contained in Paragraphs 2 and 4 and acknowledged the violation of overtime requirements contained in Paragraph 3.