

PDR

JUL 10 1989

Docket Nos. 50-361, 50-362

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

Attention: Kenneth P. Baskin, Vice President  
Nuclear Engineering, Safety and Licensing Department

Thank you for your letter of June 26, 1988, in response to our Notice of Violation and Inspection Report Nos. 50-206/89-11, 50-361/89-11 and 50-362/89-11, dated May 26, 1989, informing us of the steps you have taken to correct the items which we brought to your attention. Your corrective actions will be verified during a future inspection.

Your cooperation with us is appreciated.

Sincerely,

*Original Signed*

M. M. Mendonca, Acting Chief  
Reactor Projects Branch

bcc w/copy of letter dated 6/26/89:

- docket file
- State of California
- A. Johnson
- G. Cook
- B. Faulkenberry
- J. Martin
- Resident Inspector
- Project Inspector
- J. Zollicoffer
- M. Smith

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7/10/89

PJohnson  
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AJohnson  
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MMendonca  
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Gentlemen:

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Units 1

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**Southern California Edison Company**

P.O. BOX 800  
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ROSEMEAD, CALIFORNIA 91770

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KENNETH P. BASKIN  
VICE PRESIDENT

TELEPHONE  
818-302-1401

June 26, 1989

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

Gentlemen:

Subject: Docket Nos. 50-361 and 50-362  
Reply to a Notice of Violation  
San Onofre Nuclear Generating Station,  
Units 2 and 3

Reference: Letter, Mr. M. M. Mendonca (NRC) to Mr. Kenneth P.  
Baskin (SCE), dated May 26, 1989

The Reference forwarded NRC Inspection Report Nos. 50-206/89-11, 50-361/89-11, and 50-362/89-11 and a Notice of Violation resulting from the inspection conducted by Mr. C. W. Caldwell during the period March 13 - 17 and April 3 - 7, 1989. The Notice of Violation is applicable only to San Onofre Units 2 and 3. In accordance with 10 CFR 2.201, the enclosure to this letter provides the Southern California Edison Company (SCE) reply to the Notice of Violation.

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

Very truly yours,

*Kenneth P. Baskin*

Enclosure

cc: J. B. Martin, Regional Administrator, NRC Region V  
F. R. Huey, NRC Senior Resident Inspector, San Onofre Units  
1, 2 and 3

~~89-06300-154~~ 500

ENCLOSURE

REPLY TO A NOTICE OF VIOLATION

Appendix A to Mr. Mendonca's letter, dated May 26, 1989, states in part:

"10 CFR 50.49(f) requires that each item of electric equipment important to safety be environmentally qualified.

"10 CFR 50.49(j) requires that a record of the qualification be maintained to permit verification that each item of electric equipment important to safety is qualified for its application and meets its specified performance requirements when it is subjected to the conditions predicted to be present when it must perform its safety function.

"Contrary to the above, as of March 17, 1989, the licensee did not have a record of qualification for a predicted condition for electrical connectors on excore neutron monitors. The licensee was notified by the manufacturer of the monitors on May 10, 1988, that there was significant possibility of leaks in the connectors for the monitors which could cause degradation or failure of the neutron flux monitoring channel during a design basis accident.

"This is a Severity Level IV violation (Supplement I) applicable to Units 2 and 3."

NRC Inspection Report No. 50-206/89-11, dated May 26, 1989, states in part (page 8):

"Based on the information reviewed, as discussed above, the inspector considered that the licensee's NCR and 10 CFR 50.59 evaluation did not provide an adequate assessment or documentation in accordance with 10 CFR 50.49 requirements. In particular, the 10 CFR 50.59 evaluation credited alternate instrumentation for accomplishing the safety function despite the fact that none of the listed variables provides real time core reactivity information and no administrative controls were established (e.g., control room operators were not notified of the potential for these monitors to fail during post accident conditions). This is considered a violation of NRC requirements."

**RESPONSE**

1. Reasons for the violation, if admitted.

SCE admits that the environmental qualification record for the Gamma Metric flux connectors was not maintained in accordance with 10 CFR 50.49. SCE admits that when notified by the vendor (via a 10 CFR 21 Report) that the environmental qualification for the connectors could not be assured, SCE did not adequately perform the requisite safety evaluation and justification for continued operation (JCO).

On May 12, 1988, SCE received a copy of a 10 CFR 21 Report from Gamma Metric concerning the solder connections on their cable assemblies. SCE uses the Nonconforming Report (NCR) process, with its safety evaluation and corrective actions, in conjunction with a written JCO to satisfy 10 CFR 50.49 environmental qualification requirements. On June 13, 1988, Nonconformance Report (NCR) G-0865 Rev. 0, was initiated to document the Gamma Metric 10 CFR Part 21 report concerns. The NCR was reviewed and approved on August 2, 1988.

The NCR received an initial assessment of "operable pending technical evaluation". As a result, the NCR was not resolved in an expeditious manner. Due to unrelated previous problems with resolving NCRs in a timely manner, the NCR procedure has been revised to restrict the use and duration of "operable pending technical evaluation" and to improve the timeliness of NCR issuance.

SCE design engineering personnel were aware of the 10 CFR 21 report and that an NCR was in preparation. They promptly contacted the vendor to research industry reaction. A summary paper, prepared by the design engineering group, was provided to the NCR author. It was SCE's intent that the summary paper serve as the JCO. However, the summary paper was not in the appropriate format and did not contain the requisite information necessary for a formal JCO.

The NCR author relied upon the summary paper when preparing the NCR's 10 CFR 50.59 safety evaluation and attached the summary paper to the NCR. Engineering supervision and Quality Assurance (QA) personnel reviewed and approved the NCR and safety evaluation.

SCE admits the safety evaluation and summary paper improperly credited alternate instrumentation as being equivalent for accomplishing the safety function despite

the fact that none of the listed variables provides real time core reactivity information. Further, the corrective action section of NCR G-0865 Rev. 0 failed to establish administrative controls to provide operators with appropriate compensatory measures in the event the excore neutron monitors failed.

Neither the design engineering personnel nor the NCR author and reviewers (including QA) were adequately trained in preparing or reviewing either the 10 CFR 50.59 safety evaluation or the requisite JCO documentation. As a result of a previous item of noncompliance (reference letter Mr. Kenneth P. Baskin (SCE) to Mr. J. B. Martin (NRC), dated October 8, 1987), SCE developed a special training program, which commenced mid-year 1988, to improve the quality of engineering and technical work/review in NCRs, JCOs and safety evaluations.

On March 23, 1989, NCR G-0865 Rev. 1 was prepared as a result of the NRC's identification of the deficient NCR safety evaluation and JCO. NCR G-0865 Rev. 1 was issued to revise the safety evaluation and the corrective actions.

A formal JCO was also prepared. However, since SCE relies upon the NCR process to identify and initiate corrective action, the JCO did not include a discussion of the NCR's corrective actions.

During a further review by the NRC, the omission of the corrective action from the JCO Rev. 1 was identified. Coupled with several other enhancements, NCR G-0865 Rev. 2 and a revised JCO were issued and found to be acceptable by the NRC.

2. Corrective steps that have been taken and the results achieved.

A Special Order was issued April 14, 1989, to alert operators to the potential for failure of the flux connectors in a post-accident environment. A caution sticker was placed on the equipment in the control room which stated "May fail high during accident conditions" to alert the operators of the potential failure mode. The Units 2/3 Emergency Operating Instructions (EOIs) were revised to direct operators to commence emergency boration upon indications of unexpected increasing reactor power level or inadequate shut down margin.

As stated above, SCE had previously developed a training program to improve the quality of engineering and technical work/review in NCRs and 10 CFR 50.59 safety evaluations. As of February 28, 1989, the training program was considered fully implemented.

Engineering personnel who prepare and review JCOs have been instructed in the requirement to include all applicable corrective actions and administrative controls.

The QA organization is conducting enhanced training of appropriate personnel performing NCR reviews. In addition, the NCR review process has been enhanced to direct NCRs to cognizant QA and Independent Safety Engineering Group (ISEG) engineers.

3. Corrective steps that will be taken to avoid further violations.

The excore neutron flux connectors will be inspected, tested and repaired or replaced as necessary prior to return to service from the next outage of sufficient duration. Completion of this activity will occur no later than the completion of the Cycle 5 refueling outage.

4. Date when full compliance will be achieved.

Full compliance was achieved on April 12, 1989, when NCR G-0865 Rev. 2 and the revised JCO were issued and accepted by the NRC.

SOUTHERN CALIFORNIA EDISON COMPANY  
TOPICAL REPORT SCE-1-A CHANGE NOTICE

Change Notice Number: 28

Affected Amendment: 11

Affected Pages: 17.0-2, 17.0-3, 17.0-5, 17.2-34, 17.2-35, 17.2-36

Description of Change:

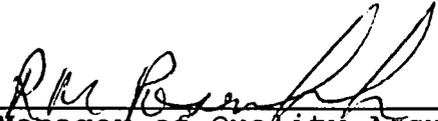
- (1) Revise definitions for testing program to clarify different types of tests in Section 17.0.1
- (2) Reorganize Section 17.2.11 to clarify the different types of testing programs, update organizational references and clarify test program requirements.

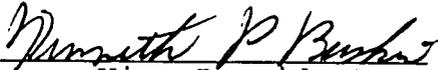
Reason for change (including basis for concluding that the change satisfies the criteria of 10CFR50, Appendix B, and the quality assurance program commitments previously accepted by the NRC):

Changes made are to clarify the requirements applicable to the various phases of the test program. These changes continue to satisfy the requirements of 10CFR50 Appendix B Criterion XI.

Change  does  does not reduce commitments previously accepted by the NRC.

Approvals:

  
\_\_\_\_\_  
Manager of Quality Assurance

  
\_\_\_\_\_  
Vice President

Date Submitted to NRC:

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~~89-07050392~~ 7AP

## 17.0.1 DEFINITIONS

Following are definitions of terms used in this report. Additional terms not defined by this subsection are defined in ANSI N45.2.10, as endorsed by Regulatory Guide 1.74.

Architect-Engineer (A-E) - An organization contracted to design, construct and perform backfit modifications to a nuclear generating station.

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Accept-As-Is - A disposition to accept a nonconforming item without further work as the deviation is judged not to negatively affect the as-designed quality or function of the item.

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Administrative Authority - The responsibility of an individual to direct the work (excluding technical direction) of another individual or group including the responsibility for hiring, firing, salary review, and position assignment of an individual. See Technical Authority.

Auditor - An individual who performs any portion of an audit, including lead auditors, technical specialists and other such as management representatives and persons in training to become Lead Auditors.

2

Construction Material Tests - Physical and chemical testing of materials intended for construction use to verify conformance with material specifications

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Consultant - A person or organization retained under contract by SCE to provide expert advice, recommendations, or work.

Coordinating Agency for Supplier Evaluation (CASE) Register - A document published periodically as a service to the Aerospace and Nuclear industry containing quality assurance capability evaluation information on suppliers developed by member Aerospace and Nuclear companies.

Design Disclosure Documents - Drawings, P&I diagrams, calculations, or specifications which define items and which are needed to translate engineering concepts into structures, systems and components.

Engineering Construction Project (ECP) - A major modification to an operating nuclear generating station.

Corporate Documentation Management (CDM) Centers - The locations where project documents including quality assurance records, are maintained in accordance with established documentation retention and control requirements.

11

17.0.1 (continued)

Engineering Review Board (ERB) - Those cognizant individuals responsible for providing approvals of Accept-As-Is or repair dispositions of nonconformance reports.

Engineering Review Process - The procedure used to determine dispositions of nonconforming items.

Initial Startup Tests - Tests conducted after fuel loading and prior to commercial operation that confirm the design bases and demonstrate, where practical, that the plant is capable of withstanding the anticipated transients and postulated accidents.

In-Service Inspection - The planned and periodic nondestructive examinations performed on installed and/or operating structures, systems, and components, as required by Section XI of the ASME Boiler and Pressure Vessel Code.

In-Service Tests - Testing which is conducted to satisfy the requirements of Section XI of the ASME Boiler and Pressure Vessel code

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Modification Tests - Those tests performed during or after completion of a modification to demonstrate that the affected structure, system or component can perform its design function and that it is compatible with existing plant systems. Includes tests similar to those performed during the initial plant construction and startup.

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Nuclear Fuel - Fuel assemblies including but not limited to the following items: fuel rods, poison rods (where applicable), spacer grids, control element assembly guide tubes, and end fittings.

Nuclear Steam Supply System (NSSS) Supplier - An organization contracted to design and manufacture a nuclear steam supply system for a nuclear generating station.

Qualification - Required acts to select a source for providing items or services.

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Preoperational Tests - Tests conducted to demonstrate the capability of items to meet safety-related performance requirements.

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Procurement Documents - Contract documents including purchase orders, work assignments, memoranda of changes, and applicable design disclosures.

17.0.1 (continued)

Station Orders - Procedures and/or instructions prepared by the station staff and approved by the Station Manager.

6

Station Tests - Tests to demonstrate that the work performed by the station staff or contractors is satisfactory and meets established requirements. Includes operability testing and In-service Testing.

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Stop Work - The authority to stop unsatisfactory work and control the further processing, delivery, or installation of nonconforming items. This does not include the authority to stop station power operations.

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Technical Authority - The authority to provide technical direction.

Technical Direction - Instructions and directions defining technical requirements for an activity.

Technical Specification - Appendix A (Safety) and Appendix B (Environmental) to the operating license of a station issued by the Nuclear Regulatory Commission.

Unreviewed Safety Question - A proposed change, test or experiment involves an Unreviewed Safety Question if: (1) the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the Safety Analysis Report (SAR) may be increased; or (2) the possibility for an accident or malfunction of a different type than any previously evaluated in the SAR may be created; or (3) the margin of safety as defined in the basis for any Technical Specification is reduced.

## 17.2.11 TEST CONTROL

### 17.2.11.1 Scope

This subsection describes the measures utilized by SCE to control testing activities in compliance with Regulatory Guides 1.8 1.30, 1.58, 1.94 and 1.116 (reference Table 17.2-1).

### 17.2.11.2 Test Control-General requirements

All testing conducted in support of station operations or modification programs is documented, and accomplished in accordance with approved test program procedures.

Test program procedures and instructions described herein incorporate or reference:

- o Applicable Regulatory Guides and SAR Commitments.
- o Applicable codes and standards
- o The requirements and acceptance limits contained in applicable design and Procurement Documents.
- o Existing station procedural requirements
- o Instructions for performing the test.
- o Test prerequisites that may include, but are not limited to, the following provisions:
  - a) Calibrated instrumentation.
  - b) Adequate and appropriate equipment.
  - c) Pretest walkdown and briefing
  - d) Completeness of item to be tested.
  - e) Suitable and, if required, controlled environmental conditions.
  - f) Mandatory hold points established by designated organizations for inspection or witness activities
  - g) Acceptance and rejection criteria, either qualitative or quantitative.
  - h) Methods for documenting, recording, evaluating and approving the test data results.

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Provisions for personnel training, data collection and storage are contained in other internal SCE documentation.

#### 17.2.11.2 (continued)

Tests are conducted in accordance with approved procedures and the results evaluated to determine compliance with established acceptance criteria. Records of tests performed at the station and supplier test records as required to be submitted by procurement documents are forwarded to the CDM Center and are available for audit by the Quality Assurance Organization.

The test program shall require that modifications, repairs and replacements of items be tested, using the same criteria as the original items. If alternatives are required, they must be reviewed and approved by the same organization that established the original requirements or by alternate organizations which have been provided sufficient background information.

#### 17.2.11.3 Prototype, Shop and Construction Material Tests

Procedures for Prototype and Shop tests are normally prepared by the organizations conducting the test; however, SCE, A-E's, or contractors may prepare these procedures where they have design or procurement responsibility. These procedures require appropriate preparing organization, quality assurance organization, and associated engineering organization review and approval prior to test implementation. Test results are documented, evaluated, and acceptance status verified by qualified individuals within the organization performing the test, and witnessed, as appropriate, by an inspector designated by the procuring organization.

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Construction material test procedures are prepared by the SCE Quality Assurance Organization (QAO) or contractor based on established engineering criteria. Tests are performed and results documented in accordance with these procedures by SCE QAO or the Contractor. Deviations from engineering criteria are evaluated by the responsible engineering organization.

#### 17.2.11.4 Initial Plant Tests

For initial plant startup, construction and component tests are conducted in compliance with test procedures normally prepared by A-E and the testing contractors performing the tests. The A-E is responsible for approval of the test procedures and for the review and evaluation of test results. The Nuclear Engineering, Safety and Licensing and Nuclear Generation Site Departments are responsible for management of the test program.

Preoperational and Initial Startup Tests are also conducted in accordance with a Startup and Test Manual for the applicable station. This manual is the responsibility of the Nuclear Engineering, Safety and Licensing Department. It contains descriptions of organization's functions, authority, responsibility, and the policies and procedures for the conduct of Preoperational and Initial Startup Test programs. The technical portions of these programs, including quality assurance requirements, are contained in test procedures prepared by SCE, A-E's, NSSS Suppliers, and other major contractors. These procedures are approved by representatives from the responsible

#### 17.2.11.5 (continued)

engineering, test and operating organizations. Evaluation and approval of test results is the responsibility of these organizations also.

The Nuclear Construction Group is responsible for implementation of the initial Startup Test program in accordance with SCE Quality Assurance Program requirements. Procedures required for implementation of this program are reviewed and approved by the Quality Assurance Organization as defined in Subsection 17.2.5.

#### 17.2.11.5 Station Tests

Station Tests performed subsequent to operational status are accomplished by the Station Staff in accordance with approved written procedures prepared by or under the direction of the Nuclear Generation Site Department. As a minimum, test results are reviewed, evaluated, and approved by the Cognizant Supervisor prior to declaring the equipment/system operable. Where test results are not acceptable, the test organization is responsible for evaluation of the test and/or results. In addition, out of tolerance as-found conditions in Technical Specification instrumentation, computers, radiation monitors and adjustable relays shall be reported to Site Support Services (formerly Operations and Maintenance Support OMS) who will trend and evaluate this data in accordance with written criteria approved by Station Technical. Indications of too large and/or too frequent deviations as defined by this written criteria shall be reported by OMS by use of a Nonconformance Report to Station Technical for disposition. The Quality Assurance Organization performs periodic audits of these test results.

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#### 17.2.11.6 Modification Tests

Modification Tests are the responsibility of the implementing organization Manager. The implementing organization is responsible for development of required procedures with technical assistance provided by the responsible engineering organization. Procedures developed for the final operational test phase are reviewed and approved by the Station Manager or designated representative. Test results are evaluated by the responsible test organization. Deviations of documented test results beyond specified acceptance limits shall be dispositioned by the responsible engineering organization prior to declaring the equipment/system operable. Quality Assurance Organization personnel are responsible for providing inspection surveillance throughout the testing program.