

U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-361/84-19, 50-362/84-19

Docket Nos. 50-361, 50-362

License Nos. NPF-10, NPF-15

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

Facility Name: San Onofre Units 2 and 3

Inspection at: San Clemente, California

Inspection conducted: June 5-8, 1984

Inspector: David B. Pereira  
D. B. Pereira, Reactor Inspector

June 26, 1984  
Date Signed

Approved by: R. J. Pate  
R. J. Pate, Chief  
Reactor Safety Branch

6/27/84  
Date Signed

Summary:

Inspection during the period of June 5-8, 1984

Areas Inspected:

Routine unannounced inspection of precritical, low power, and power ascension test results data for Units 2 and 3.

The inspection involved 32 hours onsite by one NRC inspector.

Results:

In the areas inspected, no violations of NRC requirements were identified.

## DETAILS

### 1. Persons Contacted

#### Southern California Edison (SCE)

- \*D. E. Shull, Assistant Maintenance Manager
- \*H. Newton, Maintenance
- \*M. Speer, Compliance and Configuration Control Engineer
- \*L. Wright, Startup Projects
- \*C. R. Horton, QA Supervisor, Startup, Outage, & Maintenance
- \*G. L. Patterson, QA Engineer
- \*D. P. Breig, Startup Engineer
- \*D. E. Frey, Startup Engineer
- \*B. G. Dickey, MMO Supervisor
- \*J. B. Droste, Technical Assistant
- T. K. Phifer, Compliance Engineer
- F. H. Holts, Material Management
- D. E. Moore, MMO Procurement
- R. Wilson, QA Engineer
- T. A. Mackey Jr., Compliance Engineer
- C. T. Gates, MMO (Warehouse)
- \*D. B. Schone, Onsite QA Manager
- \*K. Baldwin, Supervisor, Procurement Engineering

\*Denotes those attending the exit interview on June 8, 1984.

The inspector also interviewed other licensee employees, including members of the technical, operations, training, startup and quality assurance staff.

### 2. Precritical and Low Power Level Data Review (Units 2&3)

#### a. Inspection Objective

Determine whether uniform criteria are being applied for evaluating completed startup and low power level tests to ensure their technical and administrative adequacy.

#### b. Approach to Inspection Requirements

Following acceptance of tests results by the licensee, inspect the licensee's completed test data package as follows:

- (1) Conduct Complete Inspection of Tests Results: For all Category I tests which requires inspector evaluation of test results, complete all steps of the following procedure, as detailed in paragraph 2.c below.
- (2) Verification of Licensee Evaluation of Tests Results: For Category II tests which requires only verification that the

licensee has evaluated the test results, only steps 4 and 5 of the following procedure need to be completed (paragraph 2.c).

c. Inspection Procedure

The inspector followed the following inspection procedure to evaluate and review the subject Category I or II test procedures:

- (1) Review all test changes, including deletions
- (2) Review all test deficiencies
- (3) Review "As-run" copy of test procedure
- (4) Review the test summary and evaluation
- (5) Verify that the test results have been approved

All procedures and results were approved by the Test Working Group as required by the licensee's startup testing program.

3. Precritical Data Review - Unit 3 (Module 72596B)

The inspector examined Unit 3's Precritical data test results for Category I and Category II tests.

a. The following Category I tests were reviewed:

- (1) Reactor Protective Trip Circuit and Manual Scram - 3PE-357-01;  
3PE-358-01
- (2) Rod drop time measurements - 3HB-316-01
- (3) Calibration and Neutron Response Check of SRMs - 3PE-312-01
- (4) Pressurizer Effectiveness - 3HA-212-04

b. The following Category II tests were reviewed:

- (1) Mechanical and Instrumentation Tests on CRDs and Position Indication - 3HB-316-01
- (2) Mechanical and Electrical Tests of Incore Monitors - 3AC-310-02
- (3) Flow Coast down, Hot Flow and Flow Characteristic with Core - 3HB-213-05
- (4) Vibration Monitoring per R.G. 1.20 - 3HA-102-02

c. Precritical Data Review Inspection Results - Unit 3

- (1) Each procedure was properly annotated to identify test changes, none of which changed the basic test objectives.
- (2) The data sheets were completed, as required, and demonstrated compliance with specified acceptance criteria.
- (3) QA inspection hold points were complied with.
- (4) Each procedure's Test Exception Reports (TER) were closed or properly evaluated.

(5) Management performed test data review and evaluation and demonstrated that the test data review was satisfactorily performed.

(6) No items of noncompliance or deviations were identified.

4. Low Power Level Data Review - Unit 3 - (Module 72598B)

a. The following Category I tests were reviewed:

- (1) Source and Intermediate range overlap, verification of alarms and protective functions - 3IC-301-01
- (2) Moderator temperature reactivity coefficient and defect measurement - 3LP-333-01
- (3) Control rod activity worth determination, verify rod insertion limits and assure adequate shutdown margin - 3LP-333-01
- (4) Boron reactivity measurements - 3LP-333-01
- (5) Pseudo rod ejection test - 3LP-333-01

b. The following Category II test was reviewed:

- (1) Flux distribution measurement with normal rod patterns - 3PA-346-01

c. Low Power Level Data Review Results

- (1) Same as Precritical Data Review Results
- (2) Licensee evaluated the test level plateau data correctly and authorized proceeding to the next test plateau. Licensee performed core and plant surveys to assure safe operation during the increase of power level and arrival at the new power level.
- (3) No items of noncompliance or deviations were identified.

5. 25% Level Plateau Data Review - Unit 3 (Module 72600B)

a. The following Category I tests were reviewed:

- (1) Loss of Off-Site Power - 3PA-381-01
- (2) Shutdown from Outside the Control Room - 3PA-382-01
- (3) Core Performance - 3PA-344-06

b. The following Category II tests were reviewed:

- (1) Automatic Control System Checkout - 3PA-350-01
- (2) Vibration Monitoring - 3PA-105-01
- (3) Process Computer - 3PA-458-01

c. 25% Power Level Plateau Data Review Results

- (1) Same as Precritical Data Review Results

- (2) Authorization of licensee to raise power to the next test plateau was verified correct by checking that all testing had been satisfactorily completed, all testing anomalies were evaluated and resolved by the licensee, and the licensee performed core and plant surveys to assure safe operation during the increase of power level.
  - (3) No items of noncompliance or deviations were identified.
6. 50% Power Level Plateau Data Review - Unit 3 (Module 72608B)
- a. The following Category I tests were reviewed:
    - (1) Evaluate Flux Asymmetry with Single Rod Partially and Fully Inserted - 3PA-346-01, 3PA-351-01
    - (2) Power Reactivity Coefficient - 3PA-344-09
    - (3) Core Performance - 3PA-344-06
  - b. The following Category II tests were reviewed:
    - (1) Plant Response to Load Swings - 3PA-344-02
    - (2) Process Computer - 3PA-458-01
  - c. 50% Power Level Data Review Results
    - (1) The Power Reactivity Coefficient determination procedure 3PA-344-09, summary attachments 3 and 4 had no signature and date. Licensee initiated Test Change Notice (TCN) 08 to add signature and date to summary attachments 3 and 4. Attachments 3 and 4 were summary attachments in which the data was averaged from attachment 2 and placed in the appropriate columns of attachment 3 and 4. TCN 08 was approved and signature/date lines were inserted into Attachments 3 and 4. Item considered closed.
    - (2) Remaining procedures were performed correctly.
    - (3) Authorization to raise power to next test plateau was performed satisfactorily.
    - (4) No items of noncompliance or deviations were identified.
7. 75% Power Level Plateau Data Review-Unit 3 - (Module 72616B)
- a. The following Category I test was reviewed:
    - (1) Core Performance - 3PA-344-06
  - b. The following Category II test was reviewed:
    - (1) Process Computer - 3PA-458-01
  - c. 75% Power Level Data Review Results

- (1) Same as Precritical Data Review Results
- (2) Authorization to raise power to next test plateau was performed satisfactorily.
- (3) No items of noncompliance or deviations were identified.

8. 100% Power Level Plateau Data Review - Unit 3 - (Module 72624B)

a. The following Category I tests were reviewed:

- (1) Generator Trip - 3PA-383-01
- (2) Power Reactivity Coefficient - 3PA-344-11
- (3) Turbine Trip - 3PA-383-01
- (4) Core Performance - 3PA-344-06

b. The following Category II tests were reviewed:

- (1) Plant Response to Load Swings - 3PA-344-02
- (2) Vibration Monitoring - 3PA-105-01
- (3) Process Computer - 3PA-458-01

c. 100% Power Level Data Review Results

- (1) Same as Precritical Data Review Results
- (2) Authorization to proceed into commercial operation was verified to be satisfactory.
- (3) The Power Reactivity Coefficient determination procedure 3PA-344-11, summary attachment 3 had no signature and date. Licensee initiated Test Change Notice 3 to add signature and date to summary attachment 3. Attachment 3 is a summary attachment in which the data was averaged from attachment 2 and placed in the appropriate columns of attachment 3. TCN 3 was approved and signature/date lines were inserted into attachment 3. Item considered closed.
- (4) No items of noncompliance or deviations were identified.

9. 50% Power Level Plateau Data Review - Unit 2 - (Module 72608B)

a. The following Category I tests were reviewed:

- (1) Evaluate Flux Asymmetry with Single Rod Partially and Fully Inserted - 2PA-346-01, 2PA-351-01
- (2) Power Reactivity Coefficient - 2PA-344-09
- (3) Core Performance - 2PA-344-06

b. The following Category II tests were reviewed:

- (1) Plant Responses to Load Swings - 2PA-344-02
- (2) Process Computer - 2PA-458-01

c. 50% Power Level Data Review Results

- (1) The Power Reactivity Coefficient determination procedure 2PA-344-09, summary attachments 3 and 4 had no signature and date. Licensee initiated Test Change Notice 5 to add signature and date to summary attachments 3 and 4. TCN 5 was approved and signature/date lines were inserted into attachments 3 and 4. Item considered closed.
- (2) Remaining procedures were performed correctly.
- (3) Authorization to raise power to next test plateau was performed satisfactory.
- (4) No items of noncompliance or deviations were identified.

10. 80% Power Level Plateau Data Review - Unit 2 - (Module 72616B)

a. The following Category I tests were reviewed:

- (1) Power Reactivity Coefficient - 2PA-344-10
- (2) Core Performance - 2PA-344-06

b. The following Category II tests were reviewed:

- (1) Part Length Rod Insertion and Removal - 2PA-344-05
- (2) Process Computer - 2PA-458-01

c. 80% Power Level Data Results

- (1) The Power Reactivity Coefficient determination procedure 2PA-344-10, summary attachments 3 and 4 had no signature and date as required. Licensee initiated Test Change Notice 6 to add signature and date to summary attachments 3 and 4. TCN 6 was approved and signature/date lines were inserted into attachments 3 and 4. Item considered closed.
- (2) Remaining procedures were performed correctly.
- (3) Authorization to raise power to next test plateau was performed satisfactorily.
- (4) No items of noncompliance or deviations were identified.

11. 100% Power Level Plateau Data Review - Unit 2 - (Module 72624B)

a. The following Category I tests were reviewed:

- (1) Generator Trip - 2PA-383-01
- (2) Power Reactivity Coefficient - 2PA-344-11
- (3) Turbine Trip - 2PA-383-01
- (4) Core Performance - 2PA-344-06

b. The following Category II tests were reviewed:

- (1) Plant Response to Load Swings - 2PA-344-02
- (2) Vibration Monitoring - 2PA-105-1
- (3) Process Computer - 2PA-458-1

c. 100% Power Level Data Results

- (1) The Power Reactivity Coefficient determination procedure 2PA-344-11, summary attachments 3 and 4 had no signature and date as required. Licensee initiated Test Change Notice 5 to add signature and date to summary attachments 3 and 4. TCN 5 was approved and signature/date lines were inserted into attachments 3 and 4. Item considered closed.
- (2) Remaining procedures were performed correctly.
- (3) Authorization to proceed into commercial operation was certified to be performed satisfactory.
- (4) No items of noncompliance or deviations were identified.

12. Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) on June 8, 1984, and summarized the scope and findings of the inspection activities.