UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

May 16, 1986

Docket Nos.: 50-361
and 50-362

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Mr. James C. Holcombe
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Gentlemen:

Subject: Issuance of Amendment No. 46 to Facility Operating License NPF-10 and Amendment No. 35 to Facility Operating License NPF-15 San Onofre Nuclear Generating Station, Units 2 and 3

The Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 46 to Facility Operating License No. NPF-10 and Amendment No. 35 to Facility Operating License No. NPF-15 for the San Onofre Nuclear Generating Station, Units 2 and 3, located in San Diego County, California. The amendments revise the following: (1) Technical Specification 3/4.6.3 "Containment Isolation Condition for Operation, Action Statements and Surveillance Requirements; (2) Table 3.3-5 of Technical Specification 3/4.3.2, "Engineered Safety Feature Actuation System Instrumentation and Technical Specification 3/4.7.1.5, "Main Steam Isolation Valves"; and Limiting Condition for Operation 3.6.4.1, Hydrogen Monitors and Surveillance requirement 4.6.4.1.

These amendments were requested by your letters of January 25, April 27, and November 30, 1984, and are covered by Proposed Changes Number PCN-8, 96 and 97.

A copy of the Safety Evaluation supporting the amendments is also enclosed.

Proposed Change Number PCN-8 included a request for a change to a number of items in Table 3.6-1 (Containment Isolation Valves). Some of these changes have been denied for the reasons given in the enclosed Safety Evaluation.

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Enclosed for your information is a copy of the related notice of denial, which has been forwarded to the office of the Federal Register for publication.

Sincerely,

/S/

George W. Knighton, Director
PWR Project Directorate No. 7
Division of PWR Licensing-B

Enclosures:
1. Amendment No. 46 to NPF-10
2. Amendment No. 35 to NPF-15
3. Safety Evaluation
4. Notice of Denial

cc: See next page

| | | | | |
|---|---|---|---|---|
| DPWR-B:PBD7 | DPWR-B:PBD7 | OELD | DPWR-B:PBD7 | DPWR-B:PBD7 |
| JLee | HRood/es | | GWKnighton | DCrutchfield |
| 4/22/86 | 4/11/86 | 4/16/86 | 4/5/86 | 4/25/86 |

Mr. Kenneth P. Baskin
Southern California Edison Company

San Onofre Nuclear Generating Station
Units 2 and 3

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-361

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 46
License No. NPF-10

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The applications for amendment to the license for San Onofre Nuclear Generating Station, Unit 2 (the facility) filed by the Southern California Edison Company on behalf of itself and San Diego Gas and Electric Company, The City of Riverside and the City of Anaheim, California (licensees) dated January 25, April 27, and November 30, 1984, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public;

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this amendment and Paragraph 2.C(2) of Facility Operating License No. NPF-10 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 46, are hereby incorporated in the license. SCE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective immediately and is to be fully implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George W. Knighton, Director
PWR Project Directorate No. 7
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 16, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 46

FACILITY OPERATING LICENSE NO. NPF-10

DOCKET NO. 50-361

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contains verticals line indicating the area of change. Also to be replaced are the following overleaf pages to the amended pages.

| Amendment Pages | Overleaf Pages |
|---|---|
| 3/4 3-28 | 3/4 3-27 |
| 3/4 3-29 | - |
| 3/4 3-30 | - |
| 3/4 6-1 | 3/4 6-2 |
| 3/4 6-18 | 3/4 6-17 |
| 3/4 6-19 | - |
| 3/4 6-20 | - |
| 3/4 6-21 | - |
| 3/4 6-22 | - |
| 3/4 6-23 | - |
| 3/4 6-24 | - |
| 3/4 6-25 | - |
| 3/4 6-26 | - |
| 3/4 7-9 | 3/4 7-10 |
| B 3/4 6-4 | B 3/4 6-3 |
| B 3/4 6-5 | - |

TABLE 3.3-5

ENGINEERED SAFETY FEATURES RESPONSE TIMES

| INITIATING SIGNAL AND FUNCTION | RESPONSE TIME (SEC) |
|---|---|
| 1. Manual | |
| a. SIAS | |
| Safety Injection | Not Applicable |
| Control Room Isolation | Not Applicable |
| Containment Isolation (3) | Not Applicable |
| Containment Emergency Cooling | Not Applicable |
| b. CSAS | |
| Containment Spray | Not Applicable |
| c. CIAS | |
| Containment Isolation | Not Applicable |
| d. MSIS | |
| Main Steam Isolation | Not Applicable |
| e. RAS | |
| Containment Sump Recirculation | Not Applicable |
| f. CCAS | |
| Containment Emergency Cooling | Not Applicable |
| g. EFAS | |
| Auxiliary Feedwater | Not Applicable |
| h. CRIS | |
| Control Room Isolation | Not Applicable |
| i. TGIS | |
| Toxic Gas Isolation | Not Applicable |
| j. FHIS | |
| Fuel Handling Building Isolation | Not Applicable |
| k. CPIS | |
| Containment Purge Isolation | Not Applicable |

Table 3.3-5 (continued)

| INITIATING SIGNAL AND FUNCTION | RESPONSE TIME (SEC) |
|---|---|
| 2. Pressurizer Pressure-Low | |
| a. SIAS | |
| (1) Safety Injection | |
| (a) High Pressure Safety Injection | 31.2* |
| (b) Low Pressure Safety Injection | 41.2* |
| (c) Charging Pumps | 31.2* |
| (2) Control Room Isolation | Not Applicable |
| (3) Containment Isolation (NOTE 3) | 11.2* (NOTE 2) |
| (4) Containment Spray (Pumps) | 25.6* |
| (5) Containment Emergency Cooling | |
| (a) CCW Pumps | 31.2* |
| (b) CCW Valves (Note 4b) | 23.2* |
| (c) Emergency Cooling Fans | 21.2* |
| 3. Containment Pressure-High | |
| a. SIAS | |
| (1) Safety Injection | |
| (a) High Pressure Safety Injection | 41.0* |
| (b) Low Pressure Safety Injection | 41.0* |
| (2) Control Room Isolation | Not Applicable |
| (3) Containment Spray (Pumps) | 25.4* |
| (4) Containment Emergency Cooling | |
| (a) CCW Pumps | 31.0* |
| (b) CCW Valves (Note 4b) | 23.0* |
| (c) Emergency Cooling Fans | 21.0* |
| b. CIAS | |
| (1) Containment Isolation | 10.9* (NOTE 2) |
| (2) Main Feedwater Isolation and Backup Isolation Valves (HV 4048, HV 4052, HV 1105, HV 1106, HV 4047, HV 4051) | 10.9 |
| (3) CCW Valves (Note 4a) | 20.9 |
| (4) Mainsteam Isolation Valves (HV 8204, HV 8205) | 6.9 |
| (5) Minipurge Isolation Valves | 5.9 |
| 4. Containment Pressure - High-High | |
| CSAS | |
| Containment Spray | 23.0* |

Table 3.3-5 (Continued)

| INITIATING SIGNAL AND FUNCTION | RESPONSE TIME (SEC) |
|---|---|
| 5. Steam Generator Pressure - Low | |
| MSIS | |
| (1) Main Steam Isolation (HV8204, HV8205) | 6.9 |
| (2) Main Feedwater Isolation (HV4048, HV4052) | 10.9 |
| (3) Steam, Blowdown and Sample Isolation (HV8419, HV8421) (HV4053, HV4054, HV4057, HV4058) | 20.9 |
| (4) Auxiliary Feedwater Isolation (NOTE 7) (HV4705, HV4713, HV4730, HV4731) (HV4706, HV4712, HV4714, HV4715) | 40.9 |
| 6. Refueling Water Storage Tank - Low | |
| RAS | |
| (1) Containment Sump Valves Open | 50.7* |
| 7. 4.16 kv Emergency Bus Undervoltage | |
| LOV (loss of voltage and degraded voltage) | Figure 3.3-1 |
| 8. Steam Generator Level - Low (and No Pressure-Low Trip) | |
| EFAS | |
| (1) Auxiliary Feedwater (AC trains) | 52.7*/52.7** |
| (2) Auxiliary Feedwater (Steam/DC train) | 42.7 (NOTE 6) |
| 9. Steam Generator Level - Low (and ΔP - High) | |
| EFAS | |
| (1) Auxiliary Feedwater (AC trains) | 52.7*/52.7** |
| (2) Auxiliary Feedwater (Steam/DC train) | 42.7 (NOTE 6) |
| 10. Control Room Ventilation Airborne Radiation | |
| CRIS | |
| (1) Control Room Ventilation - Emergency Mode | Not Applicable |
| 11. Control Room Toxic Gas (Chlorine) | |
| TGIS | |
| (1) Control Room Ventilation - Isolation Mode | 16 (NOTE 5) |
| 12. Control Room Toxic Gas (Ammonia) | |
| TGIS | |
| Control Room Ventilation - Isolation Mode | 36 (NOTE 5) |

Table 3.3-5 (Continued)

| INITIATING SIGNAL AND FUNCTION | RESPONSE TIME (SEC) |
|---|---|
| 13. Control Room Toxic Gas (Butane/Propane) | |
| TGIS | |
| Control Room Ventilation - Isolation Mode | 36 (NOTE 5) |
| 14. Control Room Toxic Gas (Carbon Dioxide) | |
| TGIS | |
| Control Room Ventilation - Isolation Mode | 36 (NOTE 5) |
| 15. Fuel Handling Building Airborne Radiation | |
| FHIS | |
| Fuel Handling Building Post-Accident Cleanup Filter System | Not Applicable |
| 16. Containment Airborne Radiation | |
| CPIS | |
| Containment Purge Isolation | 2 (NOTE 2) |
| 17. Containment Area Radiation | |
| CPIS | |
| Containment Purge Isolation | 2 (NOTE 2) |

NOTES:

1. Response times include movement of valves and attainment of pump or blower discharge pressure as applicable.
2. Response time includes emergency diesel generator starting delay (applicable to A.C. motor-operated valves other than containment purge valves), instrumentation and logic response only. Refer to Table 3.6-1 for containment isolation valve closure times.
3. All CIAS-actuated valves except MSIVs, MFIVs, and CCW Valves 2HV-6211, 2HV-6216, 2HV-6223 and 2HV-6236.

4a. CCW noncritical loop isolation Valves 2HV-6212, 2HV-6213, 2HV-6218, and 2HV-6219 close.

4b. Containment emergency cooler CCW isolation Valves 2HV-6366, 2HV-6367, 2HV-6368, 2HV-6369, 2HV-6370, 2HV-6371, 2HV-6372, and 2HV-6373 open.

5. Response time includes instrumentation, logic, and isolation damper closure times only.
6. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.
7. Include HV4762 and HV4763 following implementation of DCP 195J.

* Emergency diesel generator starting delay (10 sec.) and sequence loading delays for SIAS are included.

** Emergency diesel generator starting delay (10 sec.) is included.

## 3/4.6 CONTAINMENT SYSTEMS

## 3/4.6.1 PRIMARY CONTAINMENT

### CONTAINMENT INTEGRITY

### LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations* listed in Sections A, B and C of Table 3.6-1 not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or automatic valves secured** in their positions, except as provided in Table 3.6-1 of Specification 3.6.3.

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

c. After each closing of each penetration subject to Type B testing, except containment air locks, if opened following a Type A or B test, by leak rate testing the seal with gas at $P_a$ 55.7 psig and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2.d for all other Type B and C penetrations, the combined leakage rate is less than 0.60 $L_a$.

*Except valves, blind flanges, and automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

**Locked, sealed or otherwise prevented from unintentional operation.

## CONTAINMENT LEAKAGE

### LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

a. An overall integrated leakage rate of:

1. Less than or equal to $L_a$, 0.10 percent by weight of the containment air per 24 hours at $P_a$, 55.7 psig, or

2. Less than or equal to $L_t$, 0.05 percent by weight of the containment air per 24 hours at a reduced pressure of $P_t$, 27.9 psig.

b. A combined leakage rate of less than 0.60 $L_a$ for all penetrations and valves subject to Type B and C tests, when pressurized to $P_a$.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With either (a) the measured overall integrated containment leakage rate exceeding 0.75 $L_a$ or 0.75 $L_t$, as applicable, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 $L_a$, restore the overall integrated leakage rate to less than or equal to 0.75 $L_a$ or less than or equal to 0.75 $L_t$, as applicable, and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than 0.60 $L_a$ prior to increasing the Reactor Coolant System temperature above 200°F.

### SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR 50 using the methods and provisions of ANSI N45.4 - 1972:

a. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40 ± 10 month intervals during shutdown at either $P_a$ (55.7 psig) or at $P_t$ (27.9 psig) during each 10-year service period. The third test of each set shall be conducted during the shutdown for the 10-year plant inservice inspection. Prior to the Type A tests a visual inspection shall be conducted in accordance with Specification 4.6.1.6 to demonstrate the containment structural integrity.

## CONTAINMENT COOLING SYSTEM

### LIMITING CONDITION FOR OPERATION

3.6.2.3 Two independent groups of containment cooling fans shall be OPERABLE with two fan systems to each group.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one group of the above required containment cooling fans inoperable and both containment spray systems OPERABLE, restore the inoperable group of cooling fans to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two groups of the above required containment cooling fans inoperable, and both containment spray systems OPERABLE, restore at least one group of cooling fans to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore both above required groups of cooling fans to OPERABLE status within 7 days of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With one group of the above required containment cooling fans inoperable and one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the inoperable group of containment cooling fans to OPERABLE status within 7 days of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.6.2.3 Each group of containment cooling fans shall be demonstrated OPERABLE:

a. At least once per 31 days by:

   1. Starting each fan group from the control room and verifying that each fan group operates for at least 15 minutes.

   2. Verifying a cooling water flow rate of greater than or equal to 2000 gpm to each cooler.

b. At least once per 18 months by verifying that each fan group starts automatically on a Containment Cooling Actuation test signal.

## 3/4.6.3 CONTAINMENT ISOLATION VALVES

### LIMITING CONDITION FOR OPERATION

3.6.3 The containment isolation valves specified in Table 3.6-1 shall be OPERABLE with isolation times as shown in Table 3.6-1.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

1. With one or more of the isolation valve(s) specified in Section A, B and C of Table 3.6-1 inoperable, maintain at least one isolation valve OPERABLE in each affected penetration* that is open and either:

   a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

   b. Isolate each affected penetration within 4 hours by use of at least one automatic valve secured** in the isolation position, or one closed manual valve or blind flange, or

   c. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

   d. The provisions of Specification 3.0.4 are not applicable.

2. With one or more of the valves specified in Section D of Table 3.6-1 inoperable, the appropriate ACTION statement(s) of those Limiting Conditions for Operation pertaining to the valve(s) or system in which it is installed shall be applicable.

### SURVEILLANCE REQUIREMENTS

4.6.3.1 The isolation valves specified in Section A and B of Table 3.6-1 shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of testing pursuant to Specification 4.0.5. Valves secured** in their actuated position are considered OPERABLE pursuant to this specification.

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*Any flow path from the atmosphere or a piping system inside of containment to the atmosphere or a piping system outside of containment. Each flow path is considered as a separate "penetration".

**Locked, sealed or otherwise prevented from unintentional operation.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.2 Each isolation valve (except check valves) specified in Section A and B of Table 3.6-1 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by verifying that on an ESFAS test signal, each isolation valve actuates to its isolation position.

4.6.3.3 The isolation time of each power operated or automatic valve (except check valves) in Section A and B of Table 3.6-1 shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.4 The manual isolation valves specified in Section C of Table 3.6-1 shall be demonstrated OPERABLE in accordance with Specifications 4.6.1.1.a and 4.6.1.2.d.

4.6.3.5 The isolation valves specified in Section D of Table 3.6-1 shall be demonstrated OPERABLE as required by Specification 4.0.5 and surveillance requirements associated with those Limiting Conditions for Operation pertaining to each valve or system in which it is installed. Valves secured** in the ESFAS actuated position are considered OPERABLE pursuant to this specification.

**Locked, sealed or otherwise prevented from unintentional operation.

## TABLE 3.6-1
## CONTAINMENT ISOLATION VALVES

| PENETRATION NUMBER | VALVE NUMBER | FUNCTION | MAXIMUM ISOLATION TIME (SEC) |
|---|---|---|---|
| A. AUTOMATIC CONTAINMENT ISOLATION | | | |
| 1 | HV-0510 | Pressurizer steam space sample | 40 |
| 1 | HV-0511 | Pressurizer steam space sample | 40 |
| 2 | TV-9267 | Letdown line to letdown heat exchanger | 40 |
| 2 | HV-9205 | Letdown line to letdown heat exchanger | 40 |
| 4 | HV-0508 | Reactor coolant loops hot leg sample | 40 |
| 4 | HV-0509 | Reactor coolant loops hot leg sample | 40 |
| 4 | HV-0517 | Reactor coolant loops hot leg sample | 40 |
| 6 | HV-9334 | Safety injection drain to RWST | 40 |
| 7 | HV-9217 | Reactor coolant pump seal bleed off | 40 |
| 7 | HV-9218 | Reactor coolant pump seal bleed off | 40 |
| 11 | HV-7911 | Demineralized water to service station and sump pump | 40 |
| 11 | 3"-236-C-675 | Demineralized water to service station and sump pump check valve | NA |
| 12 | HV-0512 | Pressurizer surge line sample | 40 |
| 12 | HV-0513 | Pressurizer surge line sample | 40 |
| 13 | HV-5803 | Containment sump pump discharge | 40 |
| 13 | HV-5804 | Containment sump pump discharge | 40 |
| 14 | HV-5686 | Fire protection | 40 |
| 14 | 4"-061-C-681 | Fire protection check valve | NA |
| 16C | HV-7805 | Containment air radioactivity monitor inlet | 1 |
| 16C | HV-7810 | Containment air radioactivity monitor inlet | 1 |
| 20 | 2"-573-C-611 | Quench tank makeup check valve | NA |
| 21 | 2"-017-C-627 | Service air supply line check valve | NA |
| 22 | HV-5388 | Instrument air supply line | 40 |
| 22 | 1 1/2"-016-C-617 | Instrument air supply line check valve | NA |
| 23A | HV-5437 | LP $N_2$ to containment | 40 |
| 23A | 3/4"-002-C-611 | LP $N_2$ to containment check valve | NA |
| 26 | HV-7512 | Reactor coolant drain tank pump discharge | 40 |
| 26 | HV-7513 | Reactor coolant drain tank pump discharge | 40 |
| 27C | HV-7806 | Containment air radioactivity monitor outlet | 1 |
| 27C | HV-7811 | Containment air radioactivity monitor outlet | 1 |
| 30A | HV-7802 | Containment air radioactivity monitor outlet | 1 |
| 30A | HV-7803 | Containment air radioactivity monitor outlet | 1 |
| 30B | HV-7801 | Containment air radioactivity monitor outlet | 1 |
| 30B | HV-7800 | Containment air radioactivity monitor outlet | 1 |
| 30B | HV-7816 | Containment air radioactivity monitor outlet | 1 |
| 30C | HV-0516 | Quench tank and drain tank gas sample | 40 |
| 30C | HV-0514 | Quench tank and drain tank gas sample | 40 |
| 30C | HV-0515 | Quench tank and drain tank gas sample | 40 |
| 42 | HV-6211 | Component cooling water inlet | 40 |
| 42 | HV-6223 | Component cooling water inlet | 40 |
| 43 | HV-6236 | Component cooling water outlet | 40 |

TABLE 3.6-1
CONTAINMENT ISOLATION VALVES (Continued)

| PENETRATION NUMBER | VALVE NUMBER | FUNCTION | MAXIMUM ISOLATION TIME (SEC) |
|---|---|---|---|
| A. AUTOMATIC CONTAINMENT ISOLATION (Cont.) | | | |
| 43 | HV-6216 | Component cooling water outlet | 40 |
| 45 | HV-9900 | Containment normal A/C chilled water inlet | 40 |
| 45 | HV-9920 | Containment normal A/C chilled water inlet | 40 |
| 46 | HV-9971 | Containment normal A/C chilled water outlet | 40 |
| 46 | HV-9921 | Containment normal A/C chilled water outlet | 40 |
| 47 | HV-7258 | Containment waste gas vent header | 40 |
| 47 | HV-7259 | Containment waste gas vent header | 40 |
| 68 | 2"-129-A-554 | Charging line to auxiliary spray check valve | NA |
| 77 | HV-5434 | Nitrogen supply to safety injection tanks | 40 |
| 77 | 2"-108-C-627 | Nitrogen supply to safety injection tanks check valve | NA |
| B. CONTAINMENT PURGE (CPIS) | | | |
| 18 | HV-9949** | Containment purge inlet (normal) | 12 |
| 18 | HV-9948** | Containment purge inlet (normal) | 12 |
| 18 | HV-9821 | Containment mini-purge inlet | 5 |
| 18 | HV-9823 | Containment mini-purge inlet | 5 |
| 19 | HV-9950** | Containment purge outlet (normal) | 12 |
| 19 | HV-9951** | Containment purge outlet (normal) | 12 |
| 19 | HV-9824 | Containment mini-purge outlet | 5 |
| 19 | HV-9825 | Containment mini-purge outlet | 5 |
| C. MANUAL* | | | |
| 6 | 2"-099-C-334 | Safety injection drain to RWST | NA |
| 9 | HV-9337#@ | Shutdown cooling to LPSI pumps | NA |
| 9 | HV-9377#@ | Shutdown cooling to LPSI pumps | NA |
| 9 | HV-9336#@ | Shutdown cooling to LPSI pumps | NA |
| 9 | HV-9379#@ | Shutdown cooling to LPSI pumps | NA |
| 10B | 3/4"-038-C-396 | Integrated leak rate test pressure sensor | NA |
| 10B | 3/4"-039-C-396 | Integrated leak rate test pressure sensor | NA |
| 16A | HV-0500 | Post LOCA hydrogen monitor | NA |
| 16A | HV-0501 | Post LOCA hydrogen monitor | NA |
| 16B | HV-0502 | Post LOCA hydrogen monitor | NA |
| 16B | HV-0503 | Post LOCA hydrogen monitor | NA |
| 20 | 2"-321-C-376 | Quench tank makeup | NA |

* Manual valves may be opened on an intermittent basis under administrative control.
** Power to the valve removed in accordance with Specification 3.6.1.7.
\# Not subject to Type C leakage tests.
@ Shutdown cooling valves may be opened in MODE 4.

TABLE 3.6-1
CONTAINMENT ISOLATION VALVES (Continued)

| PENETRATION NUMBER | VALVE NUMBER | FUNCTION | MAXIMUM ISOLATION TIME (SEC) |
|---|---|---|---|
| C. MANUAL* (Cont.) | | | |
| 21 | 2"-055-C-387 | Service air supply line | NA |
| 25 | 10"-100-C-212 | Refueling canal fill and drain | NA |
| 25 | 10"-101-C-212 | Refueling canal fill and drain | NA |
| 31 | HV-9946 | Containment hydrogen purge inlet | NA |
| 31 | HCV-9945 | Containment hydrogen purge inlet | NA |
| 68 | 2"-130-C-334 | Charging line to auxiliary spray | NA |
| 70 | 2"-037-C-387 | Auxiliary steam inlet to utility stations | NA |
| 70 | 2"-038-C-387 | Auxiliary steam inlet to utility stations | NA |
| 74 | HV-9917 | Containment hydrogen purge outlet | NA |
| 74 | HCV-9918 | Containment hydrogen purge outlet | NA |
| D. OTHER*** | | | |
| 3 | 3"-018-A-551# | High pressure safety injection | NA |
| 3 | HV-9323# | High pressure safety injection | NA |
| 3 | HV-9324# | High pressure safety injection | NA |
| 5 | 3"-019-A-551# | High pressure safety injection | NA |
| 5 | HV-9326# | High pressure safety injection | NA |
| 5 | HV-9327# | High pressure safety injection | NA |
| 8 | 2"-122-C-554 | Charging line to regenerative heat exchanger | NA |
| 8 | HV-9200 | Charging line to regenerative heat exchanger | NA |
| 10A | HV-0352A# | Containment pressure detectors | NA |
| 17 | HV-4058#* | Steam generator secondary coolant sample | NA |
| 27A | HV-0352D# | Containment pressure detectors | NA |
| 32 | HV-8202# | Mainsteam isolation bypass | NA |
| 33 | HV-8203# | Mainsteam isolation bypass | NA |
| 36 | HV-4054#* | Steam generator blowdown | NA |
| 37 | HV-4053#* | Steam generator blowdown | NA |
| 39 | 3"-020-A-551# | High pressure safety injection | NA |
| 39 | HV-9329# | High pressure safety injection | NA |
| 39 | HV-9330# | High pressure safety injection | NA |
| 40A | HV-0352B# | Containment pressure detectors | NA |
| 41 | 3"-021-A-551# | High pressure safety injection | NA |
| 41 | HV-9332# | High pressure safety injection | NA |

* Manual valves may be opened on an intermittent basis under administrative control.
*** Valves secured in the ESFAS actuated position are considered OPERABLE pursuant to this specification.
\# Not subject to Type C leakage tests.

TABLE 3.6-1
CONTAINMENT ISOLATION VALVES (Continued)

| PENETRATION NUMBER | VALVE NUMBER | FUNCTION | MAXIMUM ISOLATION TIME (SEC) |
|---|---|---|---|
| D. OTHER*** (Cont.) | | | |
| 41 | HV-9333# | High pressure safety injection | NA |
| 44 | HV-4057#* | Steam generator secondary coolant sample | NA |
| 48 | 8"-072-A-552# | Low pressure safety injection | NA |
| 48 | HV-9322# | Low pressure safety injection | NA |
| 49 | 8"-073-A-552# | Low pressure safety injection | NA |
| 49 | HV-9325# | Low pressure safety injection | NA |
| 50 | 8"-074-A-552# | Low pressure safety injection | NA |
| 50 | HV-9328# | Low pressure safety injection | NA |
| 51 | 8"-075-A-552# | Low pressure safety injection | NA |
| 51 | HV-9331# | Low pressure safety injection | NA |
| 52 | 8"-004-C-406 | Containment spray inlet | NA |
| 52 | HV-9367 | Containment spray inlet | NA |
| 53 | 8"-006-C-406 | Containment spray inlet | NA |
| 53 | HV-9368 | Containment spray inlet | NA |
| 54 | HV-9304# | Containment emergency sump recirculation | NA |
| 54 | HV-9302# | Containment emergency sump recirculation | NA |
| 55 | HV-9305# | Containment emergency sump recirculation | NA |
| 55 | HV-9303# | Containment emergency sump recirculation | NA |
| 56 | HV-6366 | Containment emergency A/C cooling water inlet | NA |
| 57 | HV-6372 | Containment emergency A/C cooling water inlet | NA |
| 58 | HV-6368 | Containment emergency A/C cooling water inlet | NA |
| 59 | HV-6370 | Containment emergency A/C cooling water inlet | NA |
| 60 | HV-6369 | Containment emergency A/C cooling water outlet | NA |
| 61 | HV-6371 | Containment emergency A/C cooling water outlet | NA |
| 62 | HV-6367 | Containment emergency A/C cooling water outlet | NA |
| 63 | HV-6373 | Containment emergency A/C cooling water outlet | NA |
| 67 | 3"-157-A-550 | Hot leg injection | NA |
| 67 | HV-9434 | Hot leg injection | NA |
| 71 | 3"-158-A-550 | Hot leg injection | NA |
| 71 | HV-9420 | Hot leg injection | NA |
| 73A | HV-0352C# | Containment pressure detectors | NA |

* Manual valves may be opened on an intermittent basis under administrative control.
*** Valves secured in the ESFAS actuated position are considered OPERABLE pursuant to this specification.
\# Not subject to Type C leakage tests.

DELETED INTENTIONALLY

DELETED INTENTIONALLY

## 3/4.6.4 COMBUSTIBLE GAS CONTROL

### HYDROGEN MONITORS

### LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen monitors shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With one hydrogen monitor inoperable, restore the inoperable monitor to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

b. With two hydrogen monitors inoperable, restore at least one hydrogen monitor to OPERABLE within 48 hours or be in at least HOT STANDBY within the next 6 hours.

c. With one hydrogen monitor inoperable, the provisions of Specification 3.0.4 are not applicable.

### SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen monitor shall be demonstrated OPERABLE by:

a. The performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days, and,

b. At least once per 92 days on a STAGGERED TEST BASIS, by performing a CHANNEL CALIBRATION using the following sample gases:

   i) Nitrogen, and

   ii) Four volume percent hydrogen, balance nitrogen.

## MAIN STEAM LINE ISOLATION VALVES

### LIMITING CONDITION FOR OPERATION

3.7.1.5 Each main steam line isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

MODE 1 - With one main steam line isolation valve inoperable but open, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise, reduce power to less than or equal to 5 percent RATED THERMAL POWER within the next 2 hours.

MODES 2 and 3 - With one main steam line isolation valve inoperable, subsequent operation in MODES 2 or 3 may proceed provided:

a. The isolation valve is maintained closed.

b. The provisions of Specification 3.0.4 are not applicable.

Otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

### SURVEILLANCE REQUIREMENTS

4.7.1.5 Each main steam line isolation valve shall be demonstrated OPERABLE by verifying full closure within 6.0 seconds when tested pursuant to Specification 4.0.5.

## 3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

### LIMITING CONDITION FOR OPERATION

3.7.2 The temperatures of both the primary and secondary coolants in the steam generators shall be greater than 70°F when the pressure of either coolant in the steam generator is greater than 200 psig.

APPLICABILITY: At all times.

ACTION:

With the requirements of the above specification not satisfied:

a. Reduce the steam generator pressure of the applicable side to less than or equal to 200 psig within 30 minutes, and

b. Perform an engineering evaluation to determine the effect of the overpressurization on the structural integrity of the steam generator. Determine that the steam generator remains acceptable for continued operation prior to increasing its temperatures above 200°F.

### SURVEILLANCE REQUIREMENTS

4.7.2 The pressure in each side of the steam generators shall be determined to be less than 200 psig at least once per hour when the temperature of either the primary or secondary coolant is less than 70°F.

## 3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM

The 42-inch containment purge supply and exhaust isolation valves are required to be closed during plant operation since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves closed during plant operations ensures that excessive quantities of radioactive materials will not be released via the containment purge system. To provide assurance that the 42-inch valves cannot be inadvertently opened, they are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed or prevent power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 42-inch valves, the 8-inch valves will close during a LOCA or steam line break accident and therefore the site boundary dose guidelines of 10 CFR Part 100 would not be exceeded in the event of an accident during purging operations. The design of the 8-inch purge supply and exhaust isolation valves meets the requirements of Branch Technical Position CSB 6-4, "Containment Purging During Normal Plant Operations."

Leakage integrity tests with a maximum allowable leakage rate for purge supply and exhaust isolation valves will provide early indication of resilient material seal degradation and will allow the opportunity for repair before gross leakage failure develops. The 0.60 $L_a$ leakage limit shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

## 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

### 3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

## 3/4.6.2.2 IODINE REMOVAL SYSTEM

The OPERABILITY of the iodine removal system ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure that the solution recirculated with containment after a LOCA has a pH value between 8.0 and 10.0 at the end of the NaOH injection period. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics. These assumptions are consistent with the iodine removal efficiency assumed in the accident analyses.

The 5 year Surveillance testing is intended to verify that no crystallization of the NaOH or other obstruction has occurred in the piping from the spray additive tank to the suction of the containment spray pumps.

## 3/4.6.2.3 CONTAINMENT COOLING SYSTEM

The OPERABILITY of the containment cooling system ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available when operated in conjunction with the containment spray systems during post-LOCA conditions.

The containment cooling system and the containment spray system are redundant to each other in providing post accident cooling of the containment atmosphere. As a result of this redundancy in cooling capability, the allowable out of service time requirements for the containment cooling system have been appropriately adjusted. However, the allowable out of service time requirements for the containment spray system have been maintained consistent with that assigned other inoperable ESF equipment since the containment spray system also provides a mechanism for removing iodine from the containment atmosphere.

## 3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere and is consistent with the requirements of GDC 54 through 57 of Appendix A to 10 CFR 50. Containment isolation within the time limits specified for those power operated isolation valves designed to close automatically upon a CIAS signal ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA. Such valves are listed in Sections A and B of Table 3.6-1 and Surveillance requirements to verify OPERABILITY of these valves are explicitly stated in 4.6.3.1 thru 4.6.3.3. Check valves located inside containment are considered OPERABLE provided their leak rate is within limits when tested pursuant to 10 CFR 50 Appendix J.

3/4.6.3 CONTAINMENT ISOLATION VALVES (Continued)

Section C of Table 3.6-1 contains a listing of manual valves that are normally closed and assumed to be closed under design basis accident conditions, but which may be opened intermittently for service, maintenance or test during normal operation provided adequate administrative controls are implemented to ensure operator action is taken to close such valves in the event of an accident.

All valves in Section A, B or C are considered OPERABLE for containment isolation purpose if they are indeed locked, sealed or otherwise secured in the closed position and leakage through the affected flow path is shown to be within limits when tested pursuant to 10 CFR 50 Appendix J.

Section D of Table 3.6-1 contains a listing of valves which operate automatically on an ESFAS signal to prevent or mitigate the consequences of the design basis accident. Surveillance requirement 4.6.1.1.a is not applicable to such valves. The OPERABILITY of such valves is determined by ESFAS response time testing of Specification 3/4.3.2. Valves in Section D that are locked, sealed or otherwise secured in their ESFAS actuated position will permit performance of their safety function and are, therefore, considered OPERABLE pursuant to this specification.

3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water and 3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA", March 1971.

The containment dome air circulators are provided to ensure adequate mixing of the containment atmosphere following a LOCA. The mixing action of the containment dome air circulators combined with the containment spray system and the containment emergency fan coolers will prevent localized accumulations of hydrogen from exceeding the flammable limit.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-362

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.
License No. NPF-15

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the license for San Onofre Nuclear Generating Station, Unit 3 (the facility) filed by the Southern California Edison Company on behalf of itself and San Diego Gas and Electric Company, The City of Riverside and the City of Anaheim, California (licensees) dated January 25, April 27, and November 30, 1984, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public;

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this amendment and Paragraph 2.C(2) of Facility Operating License No. NPF-15 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 35, are hereby incorporated in the license. SCE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective immediately and is to be fully implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George W. Knighton, Director
PWR Project Directorate No. 7
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 16, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 35

FACILITY OPERATING LICENSE NO. NPF-15

DOCKET NO. 50-362

Replace the following page of the Appendix A Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical line indicating the area of change. Also to be replaced is the following overleaf page to the amended page.

| Amendment Pages | Overleaf Pages |
|---|---|
| 3/4 3-28 | 3/4 3-27 |
| 3/4 3-29 | - |
| 3/4 3-30 | - |
| 3/4 6-1 | 3/4 6-2 |
| 3/4 6-19 | - |
| 3/4 6-20 | - |
| 3/4 6-21 | - |
| 3/4 6-22 | - |
| 3/4 6-23 | - |
| 3/4 6-24 | - |
| 3/4 6-25 | - |
| 3/4 6-26 | - |
| 3/4 6-27 | 3/4 6-28 |
| 3/4 7-10 | 3/4 7-9 |
| B 3/4 6-4 | B 3/4 6-3 |
| B 3/4 6-5 | - |

TABLE 3.3-5

ENGINEERED SAFETY FEATURES RESPONSE TIMES

| INITIATING SIGNAL AND FUNCTION | RESPONSE TIME (SEC) |
|---|---|
| 1. Manual | |
| a. SIAS | |
| Safety Injection | Not Applicable |
| Control Room Isolation | Not Applicable |
| Containment Isolation (3) | Not Applicable |
| Containment Emergency Cooling | Not Applicable |
| b. CSAS | |
| Containment Spray | Not Applicable |
| c. CIAS | |
| Containment Isolation | Not Applicable |
| d. MSIS | |
| Main Steam Isolation | Not Applicable |
| e. RAS | |
| Containment Sump Recirculation | Not Applicable |
| f. CCAS | |
| Containment Emergency Cooling | Not Applicable |
| g. EFAS | |
| Auxiliary Feedwater | Not Applicable |
| h. CRIS | |
| Control Room Isolation | Not Applicable |
| i. TGIS | |
| Toxic Gas Isolation | Not Applicable |
| j. FHIS | |
| Fuel Handling Building Isolation | Not Applicable |
| k. CPIS | |
| Containment Purge Isolation | Not Applicable |

Table 3.3-5 (continued)

| INITIATING SIGNAL AND FUNCTION | RESPONSE TIME (SEC) |
|---|---|
| 2. Pressurizer Pressure-Low | |
| SIAS | |
| (1) Safety Injection | |
| (a) High Pressure Safety Injection | 31.2* |
| (b) Low Pressure Safety Injection | 41.2* |
| (c) Charging Pumps | 31.2* |
| (2) Control Room Isolation | Not Applicable |
| (3) Containment Isolation (NOTE 3) | 11.2* (NOTE 2) |
| (4) Containment Spray (Pumps) | 25.6* |
| (5) Containment Emergency Cooling | |
| (a) CCW Pumps | 31.2* |
| (b) CCW Valves (NOTE 4b) | 23.2* |
| (c) Emergency Cooling Fans | 21.2* |
| 3. Containment Pressure-High | |
| a. SIAS | |
| (1) Safety Injection | |
| (a) High Pressure Safety Injection | 41.0* |
| (b) Low Pressure Safety Injection | 41.0* |
| (2) Control Room Isolation | Not Applicable |
| (3) Containment Spray (Pumps) | 25.4* |
| (4) Containment Emergency Cooling | |
| (a) CCW Pumps | 31.0* |
| (b) CCW Valves (NOTE 4b) | 23.0* |
| (c) Emergency Cooling Fans | 21.0* |
| b. CIAS | |
| (1) Containment Isolation | 10.9* (NOTE 2) |
| (2) Main Feedwater Backup Isolation and Backup Isolation Valves (HV 4048, HV 4052, HV 1105, HV 1106, HV 4047, HV 4051) | 10.9 |
| (3) CCW Valves (Note 4a) | 20.9 |
| (4) Mainsteam Isolation Valves (HV 8204, HV 8205) | 6.9 |
| (5) Minipurge Isolation Valves | 5.9 |
| 4. Containment Pressure - High-High | |
| CSAS | |
| Containment Spray | 23.0* |

Table 3.3-5 (Continued)

| INITIATING SIGNAL AND FUNCTION | RESPONSE TIME (SEC) |
|---|---|
| 5. Steam Generator Pressure - Low | |
| a. MSIS | |
| (1) Main Steam Isolation (HV8204, HV8205) | 6.9 |
| (2) Main Feedwater Isolation (HV4048, HV4052) | 10.9 |
| (3) Steam, Blowdown and Sample Isolation (HV8419, HV8421) (HV4053, HV4054, HV4057, HV4058) | 20.9 |
| (4) Auxiliary Feedwater Isolation (NOTE 7) (HV4705, HV4713, HV4730, HV4731) (HV4706, HV4712, HV4714, HV4715) | 40.9 |
| 6. Refueling Water Storage Tank - Low | |
| a. RAS | |
| (1) Containment Sump Valves Open | 50.7* |
| 7. 4.16 kV Emergency Bus Undervoltage | |
| a. LOV (loss of voltage and degraded voltage) | Figure 3.3-1 |
| 8. Steam Generator Level - Low (and No Pressure-Low Trip) | |
| a. EFAS | |
| (1) Auxiliary Feedwater (AC trains) | 52.7*/52.7** |
| (2) Auxiliary Feedwater (Steam/DC train) | 42.7 (Note 6) |
| 9. Steam Generator Level - Low (and P - High) | |
| a. EFAS | |
| (1) Auxiliary Feedwater (AC trains) | 52.7*/52.7** |
| (2) Auxiliary Feedwater (Steam/DC train) | 42.7 (Note 6) |
| 10. Control Room Ventilation Airborne Radiation | |
| a. CRIS | |
| (1) Control Room Ventilation - Emergency Mode | Not Applicable |
| 11. Control Room Toxic Gas (Chlorine) | |
| a. TGIS | |
| (1) Control Room Ventilation - Isolation Mode | 16 (NOTE 5) |
| 12. Control Room Toxic Gas (Ammonia) | |
| a. TGIS | |
| (1) Control Room Ventilation - Isolation Mode | 36 (NOTE 5) |

Table 3.3-5 (Continued)

| INITIATING SIGNAL AND FUNCTION | RESPONSE TIME (SEC) |
|---|---|
| 13. Control Room Toxic Gas (Butane/Propane) | |
| TGIS | |
| Control Room Ventilation - Isolation Mode | 36 (NOTE 5) |
| 14. Control Room Toxic Gas (Carbon Dioxide) | |
| TGIS | |
| Control Room Ventilation - Isolation Mode | 36 (NOTE 5) |
| 15. Fuel Handling Building Airborne Radiation | |
| FHIS | |
| Fuel Handling Building Post-Accident Cleanup Filter System | Not Applicable |
| 16. Containment Airborne Radiation | |
| CPIS | |
| Containment Purge Isolation | 2 (NOTE 2) |
| 17. Containment Area Radiation | |
| CPIS | |
| Containment Purge Isolation | 2 (NOTE 2) |

NOTES:

1. Response times include movement of valves and attainment of pump or blower discharge pressure as applicable.
2. Response time includes emergency diesel generator starting delay (applicable to AC motor operated valves other than containment purge valves), instrumentation and logic response only. Refer to Table 3.6-1 for containment isolation valve closure times.
3. All CIAS-Actuated valves except MSIVs and MFIVs and CCW valves 3HV-6211, 3HV-6216, 3HV-6223 and 3HV-6236.

4a. CCW non-critical loop isolation valves 3HV-6212, 3HV-6213, 3HV-6218 and 3HV-6219.

4b. Containment emergency cooler CCW isolation valves 3HV-6366, 3HV-6367, 3HV-6368, 3HV-6369, 3HV-6370, 3HV-6371, 3HV-6372 and 3HV-6373 open.

5. Response time includes instrumentation, logic, and isolation damper closure times only.
6. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.
7. Include HV4762 and HV4763 following implementation of DCP 195J.

* Emergency diesel generator starting delay (10 seconds) and sequence loading delays for SIAS are included.

** Emergency diesel generator starting delay (10 seconds) is included.

## 3/4.6 CONTAINMENT SYSTEMS

## 3/4.6.1 PRIMARY CONTAINMENT

### CONTAINMENT INTEGRITY

### LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations* listed in Sections A, B and C of Table 3.6-1 not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or automatic valves secured** in their positions, except as provided in Table 3.6-1 of Specification 3.6.3.

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

c. After each closing of each penetration subject to Type B testing, except containment air locks, if opened following a Type A or B test, by leak rate testing the seal with gas at $P_a$ 55.7 psig and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2.d for all other Type B and C penetrations, the combined leakage rate is less than 0.60 $L_a$.

---

* Except valves, blind flanges, and automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

**Locked, sealed or otherwise prevented from unintentional operation.

## CONTAINMENT LEAKAGE

### LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

a. An overall integrated leakage rate of:

1. Less than or equal to $L_a$, 0.10 percent by weight of the containment air per 24 hours at $P_a$, 55.7 psig, or

2. Less than or equal to $L_t$, 0.05 percent by weight of the containment air per 24 hours at a reduced pressure of $P_t$, 27.9 psig.

b. A combined leakage rate of less than 0.60 $L_a$ for all penetrations and valves subject to Type B and C tests, when pressurized to $P_a$.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With either (a) the measured overall integrated containment leakage rate exceeding 0.75 $L_a$ or 0.75 $L_t$, as applicable, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 $L_a$, restore the overall integrated leakage rate to less than or equal to 0.75 $L_a$ or less than or equal to 0.75 $L_t$, as applicable, and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than 0.60 $L_a$ prior to increasing the Reactor Coolant System temperature above 200°F.

### SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR 50 using the methods and provisions of ANSI N45.4 - 1972:

a. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40 $\pm$ 10 month intervals during shutdown at either $P_a$ (55.7 psig) or at $P_t$ (27.9 psig) during each 10-year service period. The third test of each set shall be conducted during the shutdown for the 10-year plant inservice inspection. Prior to the Type A tests a visual inspection shall be conducted in accordance with Specification 4.6.1.6 to demonstrate the containment structural integrity.

## 3/4.6.3 CONTAINMENT ISOLATION VALVES

### LIMITING CONDITION FOR OPERATION

3.6.3 The containment isolation valves specified in Table 3.6-1 shall be OPERABLE with isolation times as shown in Table 3.6-1.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

1. With one or more of the isolation valve(s) specified in Section A, B and C of Table 3.6-1 inoperable, maintain at least one isolation valve OPERABLE in each affected penetration* that is open and either:

   a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

   b. Isolate each affected penetration within 4 hours by use of at least one automatic valve secured** in the isolation position, or one closed manual valve or blind flange, or

   c. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

   d. The provisions of Specification 3.0.4 are not applicable.

2. With one or more of the valves specified in Section D of Table 3.6-1 inoperable, the appropriate ACTION statement(s) of those Limiting Conditions for Operation pertaining to the valve(s) or system in which it is installed shall be applicable.

### SURVEILLANCE REQUIREMENTS

4.6.3.1 The isolation valves specified in Section A and B of Table 3.6-1 shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of testing pursuant to Specification 4.0.5. Valves secured** in their actuated position are considered OPERABLE pursuant to this specification.

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*Any flow path from the atmosphere or a piping system inside of containment to the atmosphere or a piping system outside of containment. Each flow path is considered as a separate "penetration".

**Locked, sealed or otherwise prevented from unintentional operation.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.2 Each isolation valve (except check valves) specified in Section A and B of Table 3.6-1 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by verifying that on an ESFAS test signal, each isolation valve actuates to its isolation position.

4.6.3.3 The isolation time of each power operated or automatic valve (except check valves) in Section A and B of Table 3.6-1 shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.4 The manual isolation valves specified in Section C of Table 3.6-1 shall be demonstrated OPERABLE in accordance with Specifications 4.6.1.1.a and 4.6.1.2.d.

4.6.3.5 The isolation valves specified in Section D of Table 3.6-1 shall be demonstrated OPERABLE as required by Specification 4.0.5 and surveillance requirements associated with those Limiting Conditions for Operation pertaining to each valve or system in which it is installed. Valves secured** in the ESFAS actuated position are considered OPERABLE pursuant to this specification.

**Locked, sealed or otherwise prevented from unintentional operation.

## TABLE 3.6-1
## CONTAINMENT ISOLATION VALVES

| PENETRATION NUMBER | VALVE NUMBER | FUNCTION | MAXIMUM ISOLATION TIME (SEC) |
|---|---|---|---|
| A. AUTOMATIC CONTAINMENT ISOLATION | | | |
| 1 | HV-0510 | Pressurizer steam space sample | 40 |
| 1 | HV-0511 | Pressurizer steam space sample | 40 |
| 2 | TV-9267 | Letdown line to letdown heat exchanger | 40 |
| 2 | HV-9205 | Letdown line to letdown heat exchanger | 40 |
| 4 | HV-0508 | Reactor coolant loops hot leg sample | 40 |
| 4 | HV-0509 | Reactor coolant loops hot leg sample | 40 |
| 4 | HV-0517 | Reactor coolant loops hot leg sample | 40 |
| 6 | HV-9334 | Safety injection drain to RWST | 40 |
| 7 | HV-9217 | Reactor coolant pump seal bleed off | 40 |
| 7 | HV-9218 | Reactor coolant pump seal bleed off | 40 |
| 11 | HV-7911 | Demineralized water to service station and sump pump | 40 |
| 11 | 3"-236-C-675 | Demineralized water to service station and sump pump check valve | NA |
| 12 | HV-0512 | Pressurizer surge line sample | 40 |
| 12 | HV-0513 | Pressurizer surge line sample | 40 |
| 13 | HV-5803 | Containment sump pump discharge | 40 |
| 13 | HV-5804 | Containment sump pump discharge | 40 |
| 14 | HV-5686 | Fire protection | 40 |
| 14 | 4"-095-C-681 | Fire protection check valve | NA |
| 16C | HV-7805 | Containment air radioactivity monitor inlet | 1 |
| 16C | HV-7810 | Containment air radioactivity monitor inlet | 1 |
| 20 | 2"-573-C-611 | Quench tank makeup check valve | NA |
| 21 | 2"-017-C-627 | Service air supply line check valve | NA |
| 22 | HV-5388 | Instrument air supply line | 40 |
| 22 | 1 1/2"-016-C-617 | Instrument air supply line check valve | NA |
| 23A | HV-5437 | LP $N_2$ to containment | 40 |
| 23A | 3/4"-002-C-611 | LP $N_2$ to containment check valve | NA |
| 26 | HV-7512 | Reactor coolant drain tank pump discharge | 40 |
| 26 | HV-7513 | Reactor coolant drain tank pump discharge | 40 |
| 27C | HV-7806 | Containment air radioactivity monitor outlet | 1 |
| 27C | HV-7811 | Containment air radioactivity monitor outlet | 1 |
| 30A | HV-7802 | Containment air radioactivity monitor outlet | 1 |
| 30A | HV-7803 | Containment air radioactivity monitor outlet | 1 |
| 30B | HV-7801 | Containment air radioactivity monitor outlet | 1 |
| 30B | HV-7800 | Containment air radioactivity monitor outlet | 1 |
| 30B | HV-7816 | Containment air radioactivity monitor outlet | 1 |
| 30C | HV-0516 | Quench tank and drain tank gas sample | 40 |
| 30C | HV-0514 | Quench tank and drain tank gas sample | 40 |
| 30C | HV-0515 | Quench tank and drain tank gas sample | 40 |
| 42 | HV-6211 | Component cooling water inlet | 40 |
| 42 | HV-6223 | Component cooling water inlet | 40 |
| 43 | HV-6236 | Component cooling water outlet | 40 |

TABLE 3.6-1 (Continued)
CONTAINMENT ISOLATION VALVES

| PENETRATION NUMBER | VALVE NUMBER | FUNCTION | MAXIMUM ISOLATION TIME (SEC) |
|---|---|---|---|
| A. AUTOMATIC CONTAINMENT ISOLATION (Cont.) | | | |
| 43 | HV-6216 | Component cooling water outlet | 40 |
| 45 | HV-9900 | Containment normal A/C chilled water inlet | 40 |
| 45 | HV-9920 | Containment normal A/C chilled water inlet | 40 |
| 46 | HV-9971 | Containment normal A/C chilled water outlet | 40 |
| 46 | HV-9921 | Containment normal A/C chilled water outlet | 40 |
| 47 | HV-7258 | Containment waste gas vent header | 40 |
| 47 | HV-7259 | Containment waste gas vent header | 40 |
| 68 | 2"-129-A-554 | Charging line to auxiliary spray check valve | NA |
| 77 | HV-5434 | Nitrogen supply to safety injection tanks | 40 |
| 77 | 2"-108-C-627 | Nitrogen supply to safety injection tanks check valve | NA |
| B. CONTAINMENT PURGE (CPIS) | | | |
| 18 | HV-9949** | Containment purge inlet (normal) | 12 |
| 18 | HV-9948** | Containment purge inlet (normal) | 12 |
| 18 | HV-9821 | Containment mini-purge inlet | 5 |
| 18 | HV-9823 | Containment mini-purge inlet | 5 |
| 19 | HV-9950** | Containment purge outlet (normal) | 12 |
| 19 | HV-9951** | Containment purge outlet (normal) | 12 |
| 19 | HV-9824 | Containment mini-purge outlet | 5 |
| 19 | HV-9825 | Containment mini-purge outlet | 5 |
| C. MANUAL* | | | |
| 6 | 2"-099-C-334 | Safety injection drain to RWST | NA |
| 9 | HV-9337#@ | Shutdown cooling to LPSI pumps | NA |
| 9 | HV-9377#@ | Shutdown cooling to LPSI pumps | NA |
| 9 | HV-9336#@ | Shutdown cooling to LPSI pumps | NA |
| 9 | HV-9379#@ | Shutdown cooling to LPSI pumps | NA |
| 10C | 3/4"-038-C-396 | Integrated leak rate test pressure sensor | NA |
| 10C | 3/4"-039-C-396 | Integrated leak rate test pressure sensor | NA |
| 16A | HV-0500 | Post LOCA hydrogen monitor | NA |
| 16A | HV-0501 | Post LOCA hydrogen monitor | NA |
| 16B | HV-0502 | Post LOCA hydrogen monitor | NA |
| 16B | HV-0503 | Post LOCA hydrogen monitor | NA |
| 20 | 2"-321-C-376 | Quench tank makeup | NA |

* Manual valves may be opened on an intermittent basis under administrative control.
** Power to the valve removed in accordance with Specification 3.6.1.7.
\# Not subject to Type C leakage tests.
@ Shutdown cooling valves may be opened in MODE 4.

TABLE 3.6-1 (Continued)
CONTAINMENT ISOLATION VALVES

| PENETRATION NUMBER | VALVE NUMBER | FUNCTION | MAXIMUM ISOLATION TIME (SEC) |
|---|---|---|---|
| C. MANUAL* (Cont.) | | | |
| 21 | 2"-055-C-387 | Service air supply line | NA |
| 25 | 10"-100-C-212 | Refueling canal fill and drain | NA |
| 25 | 10"-101-C-212 | Refueling canal fill and drain | NA |
| 31 | HV-9946 | Containment hydrogen purge inlet | NA |
| 31 | HCV-9945 | Containment hydrogen purge inlet | NA |
| 68 | 2"-130-C-334 | Charging line to auxiliary spray | NA |
| 70 | 2"-037-C-387 | Auxiliary steam inlet to utility stations | NA |
| 70 | 2"-038-C-387 | Auxiliary steam inlet to utility stations | NA |
| 74 | HV-9917 | Containment hydrogen purge outlet | NA |
| 74 | HCV-9918 | Containment hydrogen purge outlet | NA |
| D. OTHER*** | | | |
| 3 | 3"-018-A-551# | High pressure safety injection | NA |
| 3 | HV-9323# | High pressure safety injection | NA |
| 3 | HV-9324# | High pressure safety injection | NA |
| 5 | 3"-019-A-551# | High pressure safety injection | NA |
| 5 | HV-9326# | High pressure safety injection | NA |
| 5 | HV-9327# | High pressure safety injection | NA |
| 8 | 2"-122-C-554 | Charging line to regenerative heat exchanger | NA |
| 8 | HV-9200 | Charging line to regenerative heat exchanger | NA |
| 10A | HV-0352A# | Containment pressure detectors | NA |
| 17 | HV-4058#* | Steam generator secondary coolant sample | NA |
| 27A | HV-0352D# | Containment pressure detectors | NA |
| 32 | HV-8202# | Mainsteam isolation bypass | NA |
| 33 | HV-8203# | Mainsteam isolation bypass | NA |
| 36 | HV-4054#* | Steam generator blowdown | NA |
| 37 | HV-4053#* | Steam generator blowdown | NA |
| 39 | 3"-020-A-551# | High pressure safety injection | NA |
| 39 | HV-9329# | High pressure safety injection | NA |
| 39 | HV-9330# | High pressure safety injection | NA |
| 40A | HV-0352B# | Containment pressure detectors | NA |
| 41 | 3"-021-A-551# | High pressure safety injection | NA |
| 41 | HV-9332# | High pressure safety injection | NA |

* Manual valves may be opened on an intermittent basis under administrative control.

\# Not subject to Type C leakage tests.

*** Valves secured in the ESFAS actuated position are considered OPERABLE pursuant to this specification.

TABLE 3.6-1 (Continued)
CONTAINMENT ISOLATION VALVES

| PENETRATION NUMBER | VALVE NUMBER | FUNCTION | MAXIMUM ISOLATION TIME (SEC) |
|---|---|---|---|
| D. OTHER*** (Cont.) | | | |
| 41 | HV-9333# | High pressure safety injection | NA |
| 44 | HV-4057#* | Steam generator secondary coolant sample | NA |
| 48 | 8"-072-A-552# | Low pressure safety injection | NA |
| 48 | HV-9322# | Low pressure safety injection | NA |
| 49 | 8"-073-A-552# | Low pressure safety injection | NA |
| 49 | HV-9325# | Low pressure safety injection | NA |
| 50 | 8"-074-A-552# | Low pressure safety injection | NA |
| 50 | HV-9328# | Low pressure safety injection | NA |
| 51 | 8"-075-A-552# | Low pressure safety injection | NA |
| 51 | HV-9331# | Low pressure safety injection | NA |
| 52 | 8"-004-C-406 | Containment spray inlet | NA |
| 52 | HV-9367 | Containment spray inlet | NA |
| 53 | 8"-006-C-406 | Containment spray inlet | NA |
| 53 | HV-9368 | Containment spray inlet | NA |
| 54 | HV-9304# | Containment emergency sump recirculation | NA |
| 54 | HV-9302# | Containment emergency sump recirculation | NA |
| 55 | HV-9305# | Containment emergency sump recirculation | NA |
| 55 | HV-9303# | Containment emergency sump recirculation | NA |
| 56 | HV-6366 | Containment emergency A/C cooling water inlet | NA |
| 57 | HV-6372 | Containment emergency A/C cooling water inlet | NA |
| 58 | HV-6368 | Containment emergency A/C cooling water inlet | NA |
| 59 | HV-6370 | Containment emergency A/C cooling water inlet | NA |
| 60 | HV-6369 | Containment emergency A/C cooling water outlet | NA |
| 61 | HV-6371 | Containment emergency A/C cooling water outlet | NA |
| 62 | HV-6367 | Containment emergency A/C cooling water outlet | NA |
| 63 | HV-6373 | Containment emergency A/C cooling water outlet | NA |
| 67 | 3"-157-A-550 | Hot leg injection | NA |
| 67 | HV-9434 | Hot leg injection | NA |
| 71 | 3"-158-A-550 | Hot leg injection | NA |
| 71 | HV-9420 | Hot leg injection | NA |
| 73A | HV-0352C# | Containment pressure detectors | NA |

* Manual valves may be opened on an intermittent basis under administrative control.
*** Valves secured in the ESFAS actuated position are considered OPERABLE pursuant to this specification.
\# Not subject to Type C leakage tests.

DELETED INTENTIONALLY

DELETED INTENTIONALLY

## 3/4.6.4 COMBUSTIBLE GAS CONTROL

### HYDROGEN MONITORS

### LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen monitors shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With one hydrogen monitor inoperable, restore the inoperable monitor to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

b. With two hydrogen monitors inoperable, restore at least one hydrogen monitor to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours.

c. With one hydrogen monitor inoperable, the provisions of Specification 3.0.4 are not applicable.

### SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen monitor shall be demonstrated OPERABLE by:

a. The performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days, and

b. At least once per 92 days on a STAGGERED TEST BASIS, by performing a CHANNEL CALIBRATION using the following sample gases:

   i) Nitrogen, and

   ii) Four volume percent hydrogen, balance nitrogen.

## ELECTRIC HYDROGEN RECOMBINERS

### LIMITING CONDITION FOR OPERATION

3.6.4.2 Two independent containment hydrogen recombiner systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

### SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

a. At least once per 6 months by verifying, during a recombiner system functional test, that the minimum heater sheath temperature increases to greater than or equal to 700°F within 90 minutes. Upon reaching 700°F, increase the power setting to maximum power for 2 minutes and verify that the power meter reads greater than or equal to 60 kw.

b. At least once per 18 months by:

   1. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits.

   2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner enclosure (i.e., loose wiring or structural connections, deposits of foreign materials, etc.), and

   3. Verifying the integrity of the heater electrical circuits by performing a resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be greater than or equal to 10,000 ohms.

## TABLE 4.7-1

## SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY SAMPLE AND ANALYSIS PROGRAM

| TYPE OF MEASUREMENT AND ANALYSIS | SAMPLE AND ANALYSIS FREQUENCY |
|---|---|
| 1. Gross Activity Determination | At least once per 72 hours |
| 2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration | a) 1 per 31 days, whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit. |
| | b) 1 per 6 months, whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limit. |

## MAIN STEAM LINE ISOLATION VALVES

### LIMITING CONDITION FOR OPERATION

3.7.1.5 Each main steam line isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

MODE 1 - With one main steam line isolation valve inoperable but open, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise, reduce power to less than or equal to 5 percent RATED THERMAL POWER within the next 2 hours.

MODES 2 and 3 - With one main steam line isolation valve inoperable, subsequent operation in MODES 2 or 3 may proceed provided:

a. The isolation valve is maintained closed.

b. The provisions of Specification 3.0.4 are not applicable.

Otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

### SURVEILLANCE REQUIREMENTS

4.7.1.5 Each main steam line isolation valve shall be demonstrated OPERABLE by verifying full closure within 6.0 seconds when tested pursuant to Specification 4.0.5.

## 3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM

The 42-inch containment purge supply and exhaust isolation valves are required to be closed during plant operation since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves closed during plant operations ensures that excessive quantities of radioactive materials will not be released via the containment purge system. To provide assurance that the 42-inch valves cannot be inadvertently opened, they are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed or prevent power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 42-inch valves, the 8-inch valves will close during a LOCA or steam line break accident and therefore the site boundary dose guidelines of 10 CFR Part 100 would not be exceeded in the event of an accident during purging operations. The design of the 8-inch purge supply and exhaust isolation valves meets the requirements of Branch Technical Position CSB 6-4, "Containment Purging During Normal Plant Operations."

Leakage integrity tests with a maximum allowable leakage rate for purge supply and exhaust isolation valves will provide early indication of resilient material seal degradation and will allow the opportunity for repair before gross leakage failure develops. The 0.60 $L_a$ leakage limit shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

## 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

### 3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

3/4.6.2.2 IODINE REMOVAL SYSTEM

The OPERABILITY of the iodine removal system ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure that the solution recirculated within containment after a LOCA has a pH value vetween 8.0 and 10.0 at the end of the NaOH injection period. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion mechanical systems and components. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics. These assumptions are consistent with the iodine removal efficiency assumed in the accident analyses.

The 5-year Surveillance testing is intended to verify that no crystallization of the NaOH or other obstruction has occurred in the piping from the spray additive tank to the suction of the containment spray pumps.

3/4.6.2.3 CONTAINMENT COOLING SYSTEM

The OPERABILITY Of the containment cooling system ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available when operated in conjunction with the containment spray systems during post-LOCA conditions.

The containment cooling system and the containment spray system are redundant to each other in providing post-accident cooling of the containment atmosphere. As a result of this redundancy in cooling capability, the allowable out-of-service time requirements for the containment cooling system have been appropriately adjusted. However, the allowable out-of-service time requirements for the containment spray system have been maintained consistent with that assigned other inoperable ESF equipment since the containment spray system also provides a mechanism for removing iodine from the containment atmosphere.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere and is consistent with the requirements of GDC 54 through 57 of Appendix A to 10 CFR 50. Containment isolation within the time limits specified for those power operated isolation valves designed to close automatically upon a CIAS signal ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA. Such valves are listed in Sections A and B of Table 3.6-1 and Surveillance requirements to verify OPERABILITY of these valves are explicitly stated in 4.6.3.1 thru 4.6.3.3. Check valves located inside containment are considered OPERABLE provided their leak rate is within limits when tested pursuant to 10 CFR 50 Appendix J.

Section C of Table 3.6-1 contains a listing of manual valves that are normally closed and assumed to be closed under design basis accident conditions, but which may be opened intermittently for service, maintenance or test during normal operation provided adequate administrative controls are implemented to ensure operator action is taken to close such valves in the event of an accident.

3/4.6.3 CONTAINMENT ISOLATION VALVES (Continued)

All valves in Section A, B or C are considered OPERABLE for containment isolation purpose if they are indeed locked, sealed or otherwise secured in the closed position and leakage through the affected flow path is shown to be within limits when tested pursuant to 10 CFR 50 Appendix J.

Section D of Table 3.6-1 contains a listing of valves which operate automatically on an ESFAS signal to prevent or mitigate the consequences of the design basis accident. Surveillance requirement 4.6.1.1.a is not applicable to such valves. The OPERABILITY of such valves is determined by ESFAS response time testing of Specification 3/4.3.2. Valves in Section D that are locked, sealed or otherwise secured in their ESFAS actuated position will permit performance of their safety function and are, therefore, considered OPERABLE pursuant to this specification.

3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water and 3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA", March 1971.

The containment dome air circulators are provided to ensure adequate mixing of the containment atmosphere following a LOCA. The mixing action of the containment dome air circulators combined with the containment spray system and the containment emergency fan coolers will prevent localized accumulations of hydrogen from exceeding the flammable limit.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

# SAFETY EVALUATION SUPPORTING ISSUANCE OF

# AMENDMENT NO. 46 TO NPF-10 AND AMENDMENT NO. 35 TO NPF-15

# SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 & 3

# DOCKET NOS. 50-361 AND 50-362

## INTRODUCTION

Southern California Edison Company (SCE), on behalf of itself and the other licensees, San Diego Gas and Electric Company, The City of Riverside, California, and The City of Anaheim, California, has submitted several applications for license amendments for San Onofre Nuclear Generating Station (SONGS), Units 2 and 3. Three such requests, PCN-8, 96, and 97 are evaluated herein. These proposed changes, and the NRC staff's evaluation of each, are described below.

## PCN-8

The proposed change was submitted by letter April 27, 1984 and revised by letter dated October 16, 1985. It pertains to Technical Specification (TS) 3/4.6.3 "Containment Isolation Valves" and includes the Limiting Condition for Operation, Action Statements and Surveillance Requirements. As is discussed below, the NRC staff finds all parts of the proposed change acceptable with two exceptions. The exceptions are: (1) deleting the phrase "isolation time" from LCO 3.6.3, and (2) deleting certain isolation valves associated with the secondary system from Table 3.6-1, Containment Isolation Valves.

(A) Limiting Condition for Operation (LCO) 3.6.3

Proposed change PCN-8 would delete the phrase "with isolation time as shown in Table 3.6.1" from LCO 3.6.3, which previously read "The containment isolation valves specified in Table 3.6.1 shall be OPERABLE with isolation time as shown in Table 3.6-1." The reasons provided by the licensee to justify the change are: (1) use of the term "isolation time" in the LCO implies that the LCO is only applicable to those valves for which an isolation time is specified in table 3.6-1 and (2) according to TS 4.0.3 (and its basis), OPERABILITY is based on the satisfactory completion of Surveillance Requirements. The staff does not concur with the licensee's interpretation of the LCO, as stated above in item 1, namely, that operability is only associated with a valve's isolation time. On the contrary, the LCO requires

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that the containment isolation valves listed in Table 3.6-1 shall be OPERABLE and shall meet the isolation times specified. Furthermore, the staff does not concur with rationale of item 2 since the isolation of time of a valve is not the only way to judge operability, and compliance with the LCO is not confined to the time at which surveillance is performed. The staff does not find the proposed change acceptable since the meaning of valve operability has been mischaracterized and isolation time has been relegated to a minor role is assessing continuing valve operability. Therefore, this part of PCN-8 is denied.

(B) Action statements associated with LCO 3.6.3

Proposed change PCN-8 revises the ACTION statements of LCO 3.6.3 to identify the categories of isolation valves to which existing requirements apply, i.e. to those valves in Sections A, B and C of TS Table 3.6-1. Section D of Table 3.6-1 has been redefined to contain only those valves which operate automatically on an ESFAS signal to prevent or mitigate the consequences of the design basis accident conditions. An added action statement refers the valves in Section D to the ACTION statements to the appropriate Engineered Safety Feature LCO's. The staff finds this change acceptable since it is an editorial change associated with regrouping of Table 3.6-1.

The licensee requested that an exception to the requirements of TS 3.0.4 be added to the proposed ACTION 1.d of LCO 3.6.3. TS 3.0.4 disallows mode increases if the conditions of the LCO are not met. Since The ACTION statements of LCO 3.6.3 are not limited to any specific operating mode, upward mode changes do not relax the existing LCO requirements. Therefore, the staff finds the requested exception acceptable.

The proposed ACTION Statement 1.b of Technical Specification 3.6.3 deleted the word "deactivated" from the current specifications, but footnoted the word "secured" by defining it as "locked, sealed or otherwise prevented from unintentional operation." The reason given by the licensee is that the word "deactivated" could be interpreted to mean that an automatic valve must be closed and deenergized, with its main circuit breaker locked open which may deenergize the position indication circuits. The proposed change will provide the necessary precaution to secure the valves in the closed position from spurious or unintentional operation while maintaining the valve position indication. Therefore, the staff finds this change acceptable.

(C) Surveillance Requirements

Proposed change PCN-8 deletes the word "deactivated" in Surveillance Requirement 4.6.1.1.A, and is found acceptable by the staff on the same basis as discussed in Section B (ACTION Statements).

The licensee proposed to revise Surveillance Requirements 4.6.3.1, 4.6.3.2, and 4.6.3.3 to indicate their applicability to automatic isolation valves only, which are listed in Sections A and B of Table 3.6-1. The proposed change adds Surveillance Requirements 4.6.3.4, and 4.6.3.5 dealing with manual valves (Section C of Table 3.6-1) and isolation valves operating on an ESFAS signal (Section D of Table 3.6-1).

The staff finds that the proposed changes to these surveillance requirements are editorial in nature resulting from the regrouping of Table 3.6-1; therefore these changes are acceptable.

(D) Table 3.6-1 (Containment Isolation Valves)

PCN-8 changes Table 3.6-1 as follows: There are four sections in this table, namely: A. Automatic Containment Isolation, B. Containment Purge, C. Manual, D. Other. The surveillance requirements have been revised to specify the requirements of each applicable section of Table 3.6-1. Some isolation valves have been relocated to fit into the revised group. This is an editorial change; therefore the staff finds this change acceptable. The addition of Component Cooling Water (CCW) valves to the table is acceptable because it reflects a design change.

Additionaly, the licensee proposes to remove valves associated with the secondary system (such as main steam isolation valves, and main feedwater isolation valves) from Table 3.6-1. The justification provided by the licensee is: (1) General Design Criteria (GDC) 54 and 57 are not applicable to these secondary system isolation valves, as indicated in FSAR Table 6.2-35, and (2) some of these valves have requirements in other sections of the Technical Specifications. The staff has reviewed the proposed deletions from table 3.6-1 and has concluded that certain valves should not be deleted from the table because they are not adequately covered elsewhere in the technical specifications. These valves are all in Section D of revised Table 3.6-1 and are designated HV-4058, HV-8202, HV-8203, HV-4053, HV-4054, and HV-4057. Deletion of these valves as proposed by PCN-8 is hereby denied. All other valve deletions proposed by PCN-8 are acceptable, for the reasons given by the licensee.

PCN-96

This change was requested by letter dated November 30, 1984. It revises Table 3.3-5 of TS 3/4.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation, and TS 3/4.7.1.5, Main Steam Isolation Valves. PCN-96 increases the Containment Spray Isolation Valve (CSIV) and Main Steam Isolation Valve (MSIV) response times specified in Table 3.3-5, and the MSIV closure time specified in TS 3/4.7.1.5. In addition, the proposed change will revise Table 3.3-5 to: (1) use the Containment Isolation Acutation Signal (CIAS) for response time testing of MSIV and Mini-Purge Isolation Valve (MPIV) and (2) exclude Component Cooling Water (CCW) valves HV-6229 and HV-6235 from the response time testing under the Safety Injection Acutation Signal (SIAS) Category.

(A) Containment Spray Response Time

Proposed Change PCN-96 increases the containment spray response time from 21 seconds to 23 seconds. This change will permit a two-second increase in the opening time of the Containment Spray Isolation Valve (CSIV) from 10 seconds to 12 seconds. The licensee has evaluated the impact of this change, and has concluded that the increase in CSIV response time has a negligible effect on the containment response to a main steam line break with offsite power available since the analysis is bounded by that for a MLSB with a loss of offsite power. The consequences of a MSLB with loss of offsite power are also unaffected by the increased CSIV response time because of the emergency power load sequencing. Valve actuation power is loaded before pump power so that by the time the pump is loaded, the valves are already fully open even with an extra two-second delay. Therefore, the limiting case for the peak containment pressure and temperature analysis, which was a MSLB with loss of offsite power, remains valid. On this basis, the staff concludes that the proposed change in containment spray response time is acceptable.

(B) MFIV, MSIV, and MPIV Response Time Testing Requirement

Proposed change PCN-96 adds the response time testing requirements for for the Main Feedwater Isolation Valves (MFIV), Main Steam Isolation Valves (MSIV) and Mini-Purge Isolation Valves (MPIV) to the Containment Isolation Actuation Signal (CIAS) group. The response time testing requirements are specified in Table 3.3-5, Item 3b, of the Technical Specifications. The specified response times for the MFIVs and MPIVs are 10.9, 6.9 and 5.9 seconds, respectively.

The 10.9-second and 5.9-second response times for the MFIVs and MPIVs are consistent with the existing safety analysis in the FSAR. For MSIVs the 6.9-second closure time represents a 1 second increase over that previously prescribed. The longer MSIV response time may result in additional steam being released to the containment following a MSLB. The licensee reevaluated the steam flow through the valves during the course of valve closure, using flow area vs. time from the valve manufacturer. The net flow through the valves was determined to be less than that for the FSAR analysis. Therefore, the FSAR analysis is still valid.

Based on the above rationale, the staff finds the proposed change acceptable.

(C) Isolation Valves HV6223 and HV6236 in the Non-critical CCW Loop

Proposed change PCN-96 adds two containment isolation valves, HV6223 and HV6236, into Note 3 of TS Table 3.3-5. This note, referring to Item 2.(3) of TS Table 3.3-5, identifies containment isolation valves which are actuated on CIAS but not on SIAS. These two isolation valves are train A containment

isolation valves in the non-critical Component Cooling Water (CCW) loop. The Train B isolation valves are currently included in the note. This TS change is acceptable because it reflects a design modification approved by the NRC staff in Amendment 12 to the San Onofre 2 Operating License, issued on December 23, 1982. The basis for the staff's approval is given in the Safety Evaluation accompanying Amendment 12.

PCN-97

This change was requested by letter dated January 25, 1984. It revises Limiting Condition for Operation (LCO) 3.6.4.1, Hydrogen Monitors, and Surveillance Requirement 4.6.4.1.

(A) Limiting Condition for Operation 3.6.4.1

Proposed change PCN-97 adds ACTIONS b and c to Specification 3.6.4.1 as follows:

b. With two hydroden monitors inoperable, restore at least one hydrogen monitor to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours.

c. With one hydrogen monitor inoperable, the provisions of Specification 3.0.4 are not applicable.

The addition of ACTION b which addresses the inoperability of two hydrogen monitors, is consistent with the ACTION requirements specified for all other accident monitoring instrumentation covered by Specification 3.3.3.6. The staff, therefore, finds this addition acceptable. The addition of ACTION c allows for an exception from Specification 3.0.4 when one hydrogen monitor is inoperable. Without this exception, the discovery of one monitor being inoperable while in MODE 2 would prevent entry into MODE 1. This is perceived to be an unnecessary restriction when compared to ACTION a which which allows continued operation for up to thirty days if a hydrogen monitor has been discovered to be inoperable immediately after entry into MODE 1. Although the hydrogen monitors aid the operators in making decisions regarding operation of the hydrogen recombiners, the Post Accident Sampling System (PASS) is also available to perform this function. Therefore, we find the proposed change acceptable.

(B) Surveillance Requirement 4.6.4.1

Specification 4.6.4.1 currently requires the use of 1% and 4% concentrations of hydrogen gas for hydrogen monitor calibration. Proposed change PCN-97 substitutes of a 0% hydrogen gas concentration for the current 1% concentration. The manufacturer of the hygrogen monitoring system (i.e., General Electric) states that the hydrogen sensor is designed to have a linear response throughout its operational life, and is tested

for linearity. Because of this performance characteristics, GE recommends the use of zero gas and one sample gas (e.g., 4% hydrogen concentration). By adopting this approach, the calibration time is reduced and the length of time the containment isolation valves must be open for calibration is shortened. The staff concurs with the licensee's rationale and finds the proposed change acceptable.

## CONTACT WITH STATE OFFICIAL

These amendments involve changes in the installation or use of facility components located within the restricted area. The staff has determined that the amendments involve no significant increase in the amounts of any effluents that may be realease offsite and that there is no significant increase in individual or commulative occupation radiation exposure. The Commission has previously issued proposed findings that the amendments involve no significant hazards consideration, and there has been no public comment on such findings. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec. 51.22(c)(9). Pursuant to 10 CRF 51.22(b) no environmental impact statement or environmental assessment need to be prepared in connection with the issuance of these amendments.

## CONCLUSION

Based upon our evaluation of the proposed changes to the San Onofre Units 2 and 3 Technical Specifications, we have concluded that: there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendments will not inimical to the common defense and security or to the health and safety of the public. We, therefore, conclude that the proposed-changes are acceptable, and are hereby incorporated into the San Onofre 2 and 3 Technical Specifications.

Dated: May 16, 1986

UNITED STATES NUCLEAR REGULATORY COMMISSION

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL.

DOCKET NOS. 50-361 AND 50-362

NOTICE OF DENIAL OF AMENDMENTS TO

FACILITY OPERATING LICENSES AND OPPORTUNITY FOR HEARING

The U. S. Nuclear Regulatory Commission (the Commission) has denied in part a request by the licensees for an amendment to Facility Operatring License Nos. NPF-10, and NPF-15 issued to the Southern California Edison Company, San Diego Gas and Electric Company, the City of Riverside, California and the City of Anaheim, California for operation of the San Onofre Nuclear Generating Station, Units 2 and 3, respectively, in San Diego County, California. The Notice of Consideration of Issuance of Amendments was published in the Federal Register on February 12, 1986 (51 F.R. 5278).

The amendment, as proposed by the licensees, would change the Unit 2 and 3 Technical Specifications. The licensees proposed to remove valves associated with the secondary system (such as main steam isolation valves, and main feedwater isolation valves) from Table 3.6-1 of the Technical Specifications (TS). The justification provided by the licensees is: (1) General Design Criteria (GDC) 54 and 57 are not applicable to these secondary system isolation valves, as indicated in FSAR Table 6.2-35, and (2) some of these valves have requirements in other sections of the Technical Specifications. The Commission's staff finds that some of these valves are not adequately covered in other Technical Specifications. Therefore, the staff finds that the proposed change

to remove certain isolation valves associated with the secondary system is not acceptable. Therefore, this request is denied in part.

By June 16, 1986, the licensee may demand a hearing with respect to the denial described above and any person whose interest may be affected by this proceeding may file a written petition for leave to intervene.

A request for a hearing or petition for leave to intervene must be filed with the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Rules and Procedures Branch, Office of Administration, or may be delivered to the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., by the above date.

A copy of any petitions should also be sent to the Executive Legal Director, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and to Charles R. Kocher, Esq., Southern California Edison Company, 2244 Walnut Grove Avenue, P.O. Box 800, Rosemead, California 91770 and Orrick, Herrington and Sutcliffe, Attention: David R. Pigott, Esq., 600 Montgomery Street, San Francisco, California 94111, attorney for the licensees.

For further details with respect to this action, see (1) the applications for amendment dated January 25, April 27, and November 30, 1984, and the supplemental letter dated October 16, 1985, and (2) The Commission's Safety Evaluation issued with Amendments 46 and 35 to NPF-10 and NPF-15 dated May 16, 1986, which are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., and at the General Library, University of California at Irvine, Irvine, California. A copy of

Item (2) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director Division of PWR Licensing-B.

Dated at Bethesda, Maryland, this 16th day of May 1986.

FOR THE NUCLEAR REGULATORY COMMISSION

George W. Knighton, Director
PWR Project Directorate No. 7
Division of PWR Licensing-B

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May 16, 1986

ISSUANCE OF AMENDMENT NO.46 TO FACILITY OPERATING LICENSE NPF-10
AND AMENDMENT NO. 35 TO FACILITY OPERATING LICENSE NPF-15
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

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