



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 31, 1994

Mr. William L. Stewart
Executive Vice President, Nuclear
Arizona Public Service Company
Post Office Box 53999
Phoenix, Arizona 85072-3999

SUBJECT: ISSUANCE OF AMENDMENTS FOR THE PALO VERDE NUCLEAR GENERATING STATION
UNIT NO. 1 (TAC NO. M89081), UNIT NO. 2 (TAC NO. M89082), AND UNIT
NO. 3 (TAC NO. M89083)

Dear Mr. Stewart:

The Commission has issued the enclosed Amendment No. 85 to Facility Operating License No. NPF-41, Amendment No. 73 to Facility Operating License No. NPF-51, and Amendment No. 57 to Facility Operating License No. NPF-74 for the Palo Verde Nuclear Generating Station, Unit Nos. 1, 2, and 3, respectively. The amendments consist of changes to the Technical Specifications in response to your application dated June 17, 1994, as supplemented by letter dated September 21, 1994.

The amendments allow removal of five tables of component lists from the Palo Verde Technical Specifications in accordance with NRC Generic Letter (GL) 91-08, "Removal of Component Lists from Technical Specifications." The affected tables are Table 3.3-9B, Table 3.3-9C, Table 3.6-1, Table 3.8-2, and Table 3.8-3. These five removed tables will be incorporated into a new document, which will be administratively controlled according to the change control provisions of the TS.

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08

Mr. William L. Stewart

- 2 -

October 31, 1994

A copy of the related Safety Evaluation is also enclosed. A notice of issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Original signed by:
Brian E. Holian for

Linh N. Tran, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-528, STN 50-529,
and STN 50-530

- Enclosures:
1. Amendment No. 85 to NPF-41
 2. Amendment No. 73 to NPF-51
 3. Amendment No. 57 to NPF-74
 4. Safety Evaluation

cc w/enclosures:
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DOCUMENT NAME: PV89081.AMD

OFC	DRPW/LA <i>JC</i>	PDIV-2/PM	PDIV-2/PM	OGC <i>EB</i>	PDIV-2/D
NAME	DFoster-Curseen	LTran:pk	BHolian <i>LF</i>	<i>ETHOLLER</i>	TQuay
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1.0 DEFINITIONS

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications.

ACTION

1.1 ACTION shall be that part of a specification which prescribes remedial measures required under designated conditions.

AXIAL SHAPE INDEX

1.2 The AXIAL SHAPE INDEX shall be the power generated in the lower half of the core less the power generated in the upper half of the core divided by the sum of these powers.

AZIMUTHAL POWER TILT - T_q

1.3 AZIMUTHAL POWER TILT shall be the power asymmetry between azimuthally symmetric fuel assemblies.

CHANNEL CALIBRATION

1.4 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is calibrated.

CHANNEL CHECK

1.5 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

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CHANNEL FUNCTIONAL TEST

1.6 A CHANNEL FUNCTIONAL TEST shall be:

- a. Analog channels - the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions.
- b. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.
- c. Digital computer channels - the exercising of the digital computer hardware using diagnostic programs and the injection of simulated process data into the channel to verify OPERABILITY including alarm and/or trip functions.
- d. Radiological effluent process monitoring channels - the CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is functionally tested.

The CHANNEL FUNCTIONAL TEST shall include adjustment, as necessary, of the alarm, interlock and/or trip setpoints such that the setpoints are within the required range and accuracy.

CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

- a. All penetrations required to be closed during accident conditions are either:
 1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or
 2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administration control as permitted by Specification 3.6.3.
- b. All equipment hatches are closed and sealed,
- c. Each air lock is in compliance with the requirements of Specification 3.6.1.3,
- d. The containment leakage rates are within the limits of Specification 3.6.1.2, and
- e. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

CONTROLLED LEAKAGE

1.8 Not Applicable.

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement or manipulation of any component within the reactor pressure vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATION shall not preclude completion of movement of a component to a safe conservative position.

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ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NO. NPF-41

DOCKET NO. STN 50-528

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

XX
XXI
XXII
1-2
3/4 3-48
3/4 3-50 through 3/4 3-55
3/4 6-1
3/4 6-19
3/4 6-20
3/4 6-21 through 3/4 6-35
3/4 8-17
3/4 8-19 through 3/4 8-39
3/4 8-40
3/4 8-41 through 3/4 8-47
B 3/4 6-4

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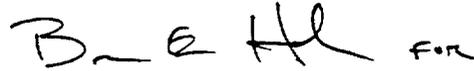
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3/4 6-21
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3/4 8-19
3/4 8-40
3/4 8-41
B 3/4 6-4

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 85, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of the date of issuance and must be fully implemented no later than 45 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Linh N. Tran, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 31, 1994



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-528

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 85
License No. NPF-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Arizona Public Service Company (APS or the licensee) on behalf of itself and the Salt River Project Agricultural Improvement and Power District, El Paso Electric Company, Southern California Edison Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority dated June 17, 1994, supplemented by letter dated September 21, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and 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;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - 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 license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-41 is hereby amended to read as follows:

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PDR ADDCK 05000528
P PDR

Mr. William L. Stewart
Arizona Public Service Company

Palo Verde

cc:

Mr. Steve Olea
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, Arizona 85007

Mr. Aubrey V. Godwin, Director
Arizona Radiation Regulatory Agency
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Arizona Public Service Company
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Rockville, Maryland 20852

Chairman, Maricopa County Board
of Supervisors
111 South Third Avenue
Phoenix, Arizona 85003

TABLE 4.3-5

METEOROLOGICAL MONITORING INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. WIND SPEED		
a. Nominal Elev. 35 feet	D	SA
b. Nominal Elev. 200 feet	D	SA
2. WIND DIRECTION		
a. Nominal Elev. 35 feet	D	SA
b. Nominal Elev. 200 feet	D	SA
3. AIR TEMPERATURE - DELTA T		
a. Nominal Elev. 35 feet - 200 feet	D	SA

INSTRUMENTATION

REMOTE SHUTDOWN SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown system monitoring instrumentation channels shown in Table 3.3-9A and each remote shutdown system disconnect switch and power and control circuit shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

- a. With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9A, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT STANDBY within the next 12 hours.
- b. With one or more remote shutdown system disconnect switches or power or control circuits inoperable, restore the inoperable switch(s)/circuit(s) to OPERABLE status or issue procedure changes per Specification 6.8.3 that identifies alternate disconnect methods or power or control circuits for remote shutdown within 7 days, or be in HOT STANDBY within the next 12 hours.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5 The Remote Shutdown System shall be demonstrated operable:

- a. By performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6 for each remote shutdown monitoring instrumentation channel.
- b. By operation of each remote shutdown system disconnect switch and power and control circuit including the actuated components at least once per 18 months.

TABLE 3.3-9A

REMOTE SHUTDOWN INSTRUMENTATION

<u>INSTRUMENTATION</u>	<u>READOUT LOCATION</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. Log Neutron Power Level	Remote Shutdown Panel	2
2. Reactor Coolant Hot Leg Temperature	Remote Shutdown Panel	1/loop
3. Reactor Coolant Cold Leg Temperature	Remote Shutdown Panel	1/loop
4. Pressurizer Pressure	Remote Shutdown Panel	1
5. Pressurizer Level	Remote Shutdown Panel	2
6. Steam Generator Pressure	Remote Shutdown Panel	2/steam generator
7. Steam Generator Level	Remote Shutdown Panel	2/steam generator
8. Refueling Water Tank Level	Remote Shutdown Panel	2
9. Charging Line Pressure	Remote Shutdown Panel	1
10. Charging Line Flow	Remote Shutdown Panel	1
11. Shutdown Cooling Heat Exchanger Temperatures	Remote Shutdown Panel	2
12. Shutdown Cooling Flow	Remote Shutdown Panel	2
13. Auxiliary Feedwater Flow Rate	Remote Shutdown Panel	2/steam generator

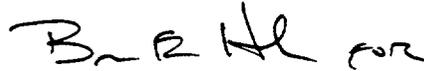
Pages 3/4 3-50 through 3/4 3-55 are not used.

Mr. William L. Stewart

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ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. NPF-51

DOCKET NO. STN 50-529

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

XX
XXI
XXII
1-2
3/4 3-48
3/4 3-50 through 3/4 3-55
3/4 6-1
3/4 6-19
3/4 6-20
3/4 6-21 through 3/4 6-35
3/4 8-17
3/4 8-19 through 3/4 8-39
3/4 8-40
3/4 8-41 through 3/4 8-47
B 3/4 6-4

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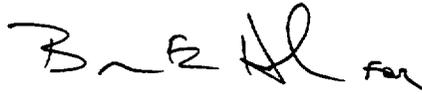
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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No.73 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of the date of issuance and must be fully implemented no later than 45 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Linh N. Tran, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 31, 1994



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-529

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 73
License No. NPF-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Arizona Public Service Company (APS or the licensee) on behalf of itself and the Salt River Project Agricultural Improvement and Power District, El Paso Electric Company, Southern California Edison Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority dated June 17, 1994, supplemented by letter dated September 21, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and 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;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - 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 license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-51 is hereby amended to read as follows:

CONTAINMENT SYSTEMS

BASES

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.

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 safety 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.

CONTAINMENT SYSTEMS

BASES

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment automatic 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 or pressurization of the containment and is consistent with the requirements of GDC 54 through GDC 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

The OPERABILITY of main steam safety valves, main steam atmospheric dump valves, and main steam isolation valves is covered separately. The main steam safety valves have very high pressure setpoints to actuate and are covered by Specification 3/4.7.1.1. The atmospheric dump valves and the main steam isolation valves are covered by Specifications 3/4.7.1.6 and 3/4.7.1.5, respectively.

The opening of locked or sealed closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: 1) stationing an operator, who is in constant communication with control room, at the valve controls, 2) instructing this operator to close these valves in an accident situation, and 3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

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 (or the purge system) 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 use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).

Pages 3/4 8-41 through 3/4 8-47 are not used.

ELECTRICAL POWER SYSTEMS

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION AND BYPASS DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.2 The thermal overload protection and bypass devices, integral with the motor starter, of each valve used in safety systems shall be OPERABLE.

APPLICABILITY: Whenever the motor-operated valve is required to be OPERABLE.

ACTION:

With the thermal overload protection for one or more of the above required valves not bypassed continuously or under accident conditions, as applicable, by an OPERABLE integral bypass device, take administrative action to continuously bypass the thermal overload within 8 hours or declare the affected valve(s) inoperable and apply the appropriate ACTION Statement(s) for the affected valve(s).

SURVEILLANCE REQUIREMENTS

4.8.4.2.1 The thermal overload protection for the above required valves shall be verified to be bypassed continuously or under accident conditions, as applicable, by an OPERABLE integral bypass device by the performance of a CHANNEL FUNCTIONAL TEST of the bypass circuitry for those thermal overloads which are normally in force during plant operation and bypassed under accident conditions and by verifying that the thermal overload protection is bypassed for those thermal overloads which are continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing:

- a. At least once per 18 months, and
- b. Following maintenance on the motor starter.

4.8.4.2.2 The thermal overload protection for the above required valves which are continuously bypassed shall be verified to be bypassed following testing during which the thermal overload protection was temporarily placed in force.

Pages 3/4 8-19 through 3/4 8-39 are not used.

ELECTRICAL POWER SYSTEMS

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.1 Primary and backup containment penetration conductor overcurrent protective devices associated with each containment electrical penetration circuit shall be OPERABLE. The scope of these protective devices excludes those circuits for which credible fault currents would not exceed the electrical penetration design rating.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one or more of the above required containment penetration conductor overcurrent protective devices inoperable:

- a. Restore the protection device(s) to OPERABLE status or deenergize the circuit(s) by tripping the associated backup circuit breaker or racking out or removing the inoperable device within 72 hours and declare the affected system or component inoperable and verify the backup circuit breaker to be tripped or the inoperable circuit breaker racked out at least once per 7 days thereafter; the provisions of Specification 3.0.4 are not applicable to overcurrent devices in circuits which have their backup circuit breakers tripped, or
- b. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.4.1 The above noted primary and backup containment penetration conductor overcurrent protective devices (except fuses) shall be demonstrated OPERABLE:

- a. At least once per 18 months:
 1. By verifying that the medium voltage (4-15 kV) circuit breakers are OPERABLE by selecting, on a rotating basis, at least 10% of the circuit breakers of each voltage level, and performing the following:
 - (a) A CHANNEL CALIBRATION of the associated protection relays, and
 - (b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- (c) For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
- 2. By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis. Testing of these circuit breakers shall consist of injecting a current with a value equal to 300% of the setpoint (pickup) of the long-time delay trip element and 150% of the setpoint (pickup) of the short-time delay trip element, and verifying that the circuit breaker operates within the time delay band width for that current specified by the manufacturer. The instantaneous element shall be tested by injecting a current for a frame size of 250 amps or less with tolerances of +40%/-25% and a frame size of 400 amps or greater of $\pm 25\%$ and verifying that the circuit breaker trips instantaneously with no apparent time delay. Molded case circuit breaker testing shall also follow this procedure except that generally no more than two trip elements, time delay and instantaneous, will be involved. Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
- b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

Pages 3/4 6-21 through 3/4 6-35 are not used.

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each containment isolation valve shall be OPERABLE*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

1. With one or more of the isolation valve(s) 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 deactivated automatic valve secured in the isolation position**, or
 - c. Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange**; or
 - d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
 - e. The provisions of Specification 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

4.6.3.1 Each containment isolation valve 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.

4.6.3.2 Each isolation valve used in containment isolation, containment spray, or containment purge shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a. Verifying that on a CIAS, CSAS or SIAS test signal, each isolation valve actuates to its isolation position.
- b. Verifying that on a CPIAS test signal, all containment purge valves actuate to their isolation position.

*Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

**The inoperable isolation valve(s) may be part of a system(s). Isolating the affected penetration(s) may affect the use of the system(s). Consider the technical specification requirements on the affected system(s) and act accordingly.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.3 The isolation time of each power operated or automatic valve used in CIAS, CPIAS, or CSAS shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.4 The containment isolation check valves shall be demonstrated OPERABLE pursuant to 10 CFR 50, Appendix J, with the exception of those check valves footnoted as "Not Type C Tested."

4.6.3.5 The containment isolation valves used as safety/relief, normally open-ESF actuated closed, or required open during accident conditions shall be demonstrated OPERABLE as required by Specification 4.0.5 and the Surveillance Requirements associated with those Limiting Conditions for Operation pertaining to each valve or system in which it is installed. Valves secured*** in their actuated position are considered operable pursuant to this specification.

4.6.3.6 The manual containment isolation valves (normally closed/post accident closed valves) shall be demonstrated OPERABLE pursuant to Surveillance Requirement 4.6.1.1.a of Specification 3.6.1.1.

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

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 1 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* 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 deactivated automatic valves secured in their positions except for valves that are open under administrative control as permitted by 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 49.5 psig and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2b. for all other Type B and C penetrations, the combined leakage rate is less than or equal to $0.60 L_a$.

* Except valves, blind flanges, and deactivated 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.

CONTAINMENT SYSTEMS

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% by weight of the containment air per 24 hours at P_a , 49.5 psig, or
 2. Less than or equal to L_t , 0.05% by weight of the containment air per 24 hours at a reduced pressure of P_t , 24.8 psig.
- b. A combined leakage rate of less than or equal to 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 or equal to 0.60 L_a prior to increasing the Reactor Coolant System temperature above 210°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 Part 50 using the methods and provisions of ANSI N45.4 - 1972:

- a. Type A (Overall Integrated Containment Leakage Rate) testing shall be conducted in accordance with the requirements specified in Appendix J to 10 CFR 50, as modified by approved exemptions.

TABLE 3.3-9A

REMOTE SHUTDOWN INSTRUMENTATION

<u>INSTRUMENTATION</u>	<u>READOUT LOCATION</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. Log Neutron Power Level	Remote Shutdown Panel	2
2. Reactor Coolant Hot Leg Temperature	Remote Shutdown Panel	1/loop
3. Reactor Coolant Cold Leg Temperature	Remote Shutdown Panel	1/loop
4. Pressurizer Pressure	Remote Shutdown Panel	1
5. Pressurizer Level	Remote Shutdown Panel	2
6. Steam Generator Pressure	Remote Shutdown Panel	2/steam generator
7. Steam Generator Level	Remote Shutdown Panel	2/steam generator
8. Refueling Water Tank Level	Remote Shutdown Panel	2
9. Charging Line Pressure	Remote Shutdown Panel	1
10. Charging Line Flow	Remote Shutdown Panel	1
11. Shutdown Cooling Heat Exchanger Temperatures	Remote Shutdown Panel	2
12. Shutdown Cooling Flow	Remote Shutdown Panel	2
13. Auxiliary Feedwater Flow Rate	Remote Shutdown Panel	2/steam generator

Pages 3/4 3-50 through 3/4 3-55 are not used.

TABLE 4.3-5

METEOROLOGICAL MONITORING INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. WIND SPEED		
a. Nominal Elev. 35 feet	D	SA
b. Nominal Elev. 200 feet	D	SA
2. WIND DIRECTION		
a. Nominal Elev. 35 feet	D	SA
b. Nominal Elev. 200 feet	D	SA
3. AIR TEMPERATURE - DELTA T		
a. Nominal Elev. 35 feet - 200 feet	D	SA

INSTRUMENTATION

REMOTE SHUTDOWN SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown system monitoring instrumentation channels shown in Table 3.3-9A and each remote shutdown system disconnect switch and power and control circuit shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

- a. With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9A, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT STANDBY within the next 12 hours.
- b. With one or more remote shutdown system disconnect switches or power or control circuits inoperable, restore the inoperable switch(s)/circuit(s) to OPERABLE status or issue procedure changes per Specification 6.8.3 that identifies alternate disconnect methods or power or control circuits for remote shutdown within 7 days, or be in HOT STANDBY within the next 12 hours.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5 The Remote Shutdown System shall be demonstrated operable:

- a. By performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6 for each remote shutdown monitoring instrumentation channel.
- b. By operation of each remote shutdown system disconnect switch and power and control circuit including the actuated components at least once per 18 months.

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 1 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* 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 deactivated automatic valves secured in their positions except for valves that are open under administrative control as permitted by 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 49.5 psig and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2b. for all other Type B and C penetrations, the combined leakage rate is less than or equal to $0.60 L_a$.

*Except valves, blind flanges and deactivated 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.

CONTAINMENT SYSTEMS

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% by weight of the containment air per 24 hours at P_a , 49.5 psig, or
 2. Less than or equal to L_c , 0.05% by weight of the containment air per 24 hours at a reduced pressure of P_c , 24.8 psig.
- b. A combined leakage rate of less than or equal to 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_c , 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_c , as applicable, and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than or equal to 0.60 L_a prior to increasing the Reactor Coolant System temperature above 210°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 Part 50 using the methods and provisions of ANSI N45.4 - 1972:

- a. Type A (Overall Integrated Containment Leakage Rate) testing shall be conducted in accordance with the requirements specified in Appendix J to 10 CFR 50, as modified by approved exemptions.

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each containment isolation valve shall be OPERABLE.*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

1. With one or more of the isolation valve(s) 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 deactivated automatic valve secured in the isolation position**, or
 - c. Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange**; or
 - d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
 - e. The provisions of Specification 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

4.6.3.1 Each isolation valve 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.

4.6.3.2 Each isolation valve used in containment isolation, containment spray, or containment purge shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a. Verifying that on a CIAS, CSAS or SIAS test signal, each isolation valve actuates to its isolation position.
- b. Verifying that on a CPIAS test signal, all containment purge valves actuate to their isolation position.

*Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

**The inoperable isolation valve(s) may be part of a system(s). Isolating the affected penetration(s) may affect the use of the system(s). Consider the technical specification requirements on the affected system(s) and act accordingly.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.3 The isolation time of each power operated or automatic valve used in CIAS, CPIAS, or CSAS shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.4 The containment isolation check valves shall be demonstrated OPERABLE pursuant to 10 CFR 50, Appendix J, with the exception of those check valves footnoted as "Not Type C Tested."

4.6.3.5 The containment isolation valves used as safety/relief, normally open—ESF actuated closed, or required open during accident conditions shall be demonstrated OPERABLE as required by Specification 4.0.5 and the Surveillance Requirements associated with those Limiting Conditions for Operation pertaining to each valve or system in which it is installed. Valves secured*** in their actuated position are considered operable pursuant to this specification.

4.6.3.6 The manual containment isolation valves (normally closed/post accident closed valves) shall be demonstrated OPERABLE pursuant to Surveillance Requirement 4.6.1.1.a of Specification 3.6.1.1.

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

Page 3/4 6-21 through 3/4 6-35 are not used.

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each containment isolation valve shall be OPERABLE*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

1. With one or more of the isolation valve(s) 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 deactivated automatic valve secured in the isolation position**, or
 - c. Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange**; or
 - d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
 - e. The provisions of Specification 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

4.6.3.1 Each containment isolation valve 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.

4.6.3.2 Each isolation valve used in containment isolation, containment spray, or containment purge shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a. Verifying that on a CIAS, CSAS or SIAS test signal, each isolation valve actuates to its isolation position.
- b. Verifying that on a CPIAS test signal, all containment purge valves actuate to their isolation position.

*Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

**The inoperable isolation valve(s) may be part of a system(s). Isolating the affected penetration(s) may affect the use of the system(s). Consider the technical specification requirements on the affected system(s) and act accordingly.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.3 The isolation time of each power operated or automatic valve used in CIAS, CPIAS, or CSAS shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.4 The containment isolation check valves shall be demonstrated OPERABLE pursuant to 10 CFR 50, Appendix J, with the exception of those check valves footnoted as "Not Type C Tested."

4.6.3.5 The containment isolation valves used as safety/relief, normally open-ESF actuated closed, or required open during accident conditions shall be demonstrated OPERABLE as required by Specification 4.0.5 and the Surveillance Requirements associated with those Limiting Conditions for Operation pertaining to each valve or system in which it is installed. Valves secured*** in their actuated position are considered operable pursuant to this specification.

4.6.3.6 The manual containment isolation valves (normally closed/post accident closed valves) shall be demonstrated OPERABLE pursuant to Surveillance Requirement 4.6.1.1.a of Specification 3.6.1.1.

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

Pages 3/4 6-21 through 3/4 6-35 are not used.

ELECTRICAL POWER SYSTEMS

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.1 Primary and backup containment penetration conductor overcurrent protective devices associated with each containment electrical penetration circuit shall be OPERABLE. The scope of these protective devices excludes those circuits for which credible fault currents would not exceed the electrical penetration design rating.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one or more of the above required containment penetration conductor overcurrent protective devices inoperable:

- a. Restore the protection device(s) to OPERABLE status or deenergize the circuit(s) by tripping the associated backup circuit breaker or racking out or removing the inoperable device within 72 hours and declare the affected system or component inoperable and verify the backup circuit breaker to be tripped or the inoperable circuit breaker racked out at least once per 7 days thereafter; the provisions of Specification 3.0.4 are not applicable to overcurrent devices in circuits which have their backup circuit breakers tripped, or
- b. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.4.1 The above noted primary and backup containment penetration conductor overcurrent protective devices (except fuses) shall be demonstrated OPERABLE:

- a. At least once per 18 months:
 1. By verifying that the medium voltage (4-15 kV) circuit breakers are OPERABLE by selecting, on a rotating basis, at least 10% of the circuit breakers of each voltage level, and performing the following:
 - (a) A CHANNEL CALIBRATION of the associated protection relays, and
 - (b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- (c) For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
- 2. By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis. Testing of these circuit breakers shall consist of injecting a current with a value equal to 300% of the setpoint (pickup) of the long-time delay trip element and 150% of the setpoint (pickup) of the short-time delay trip element, and verifying that the circuit breaker operates within the time delay band width for that current specified by the manufacturer. The instantaneous element shall be tested by injecting a current for a frame size of 250 amps or less with tolerances of +40%/-25% and a frame size of 400 amps or greater of $\pm 25\%$ and verifying that the circuit breaker trips instantaneously with no apparent time delay. Molded case circuit breaker testing shall also follow this procedure except that generally no more than two trip elements, time delay and instantaneous, will be involved. Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
- b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

Pages 3/4 8-19 through 3/4 8-39 are not used.

ELECTRICAL POWER SYSTEMS

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION AND BYPASS DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.2 The thermal overload protection and bypass devices, integral with the motor starter, of each valve used in safety systems shall be OPERABLE.

APPLICABILITY: Whenever the motor-operated valve is required to be OPERABLE.

ACTION:

With the thermal overload protection for one or more of the above required valves not bypassed continuously or under accident conditions, as applicable, by an OPERABLE integral bypass device, take administrative action to continuously bypass the thermal overload within 8 hours or declare the affected valve(s) inoperable and apply the appropriate ACTION Statement(s) for the affected valve(s).

SURVEILLANCE REQUIREMENTS

4.8.4.2.1 The thermal overload protection for the above required valves shall be verified to be bypassed continuously or under accident conditions, as applicable, by an OPERABLE integral bypass device by the performance of a CHANNEL FUNCTIONAL TEST of the bypass circuitry for those thermal overloads which are normally in force during plant operation and bypassed under accident conditions and by verifying that the thermal overload protection is bypassed for those thermal overloads which are continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing:

- a. At least once per 18 months, and
- b. Following maintenance on the motor starter.

4.8.4.2.2 The thermal overload protection for the above required valves which are continuously bypassed shall be verified to be bypassed following testing during which the thermal overload protection was temporarily placed in force.

Pages 3/4 8-41 through 3/4 8-47 are not used.

CONTAINMENT SYSTEMS

BASES

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.

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 safety 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.

CONTAINMENT SYSTEMS

BASES

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment automatic 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 or pressurization of the containment and is consistent with the requirements of GDC 54 through GDC 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

The OPERABILITY of main steam safety valves, main steam atmospheric dump valves, and main steam isolation valves is covered separately. The main steam safety valves have very high pressure setpoints to actuate and are covered by Specification 3/4.7.1.1. The atmospheric dump valves and the main steam isolation valves are covered by Specifications 3/4.7.1.6 and 3/4.7.1.5, respectively.

The opening of locked or sealed closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: 1) stationing an operator, who is in constant communication with control room, at the valve controls, 2) instructing this operator to close these valves in an accident situation, and 3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

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 (or the purge system) 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 use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-530

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 57
License No. NPF-74

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Arizona Public Service Company (APS or the licensee) on behalf of itself and the Salt River Project Agricultural Improvement and Power District, El Paso Electric Company, Southern California Edison Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority dated June 17, 1994, supplemented by letter dated September 21, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and 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;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - 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 license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-74 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 57, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of the date of issuance and must be fully implemented no later than 45 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Linh N. Tran, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 31, 1994

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 57 TO FACILITY OPERATING LICENSE NO. NPF-74

DOCKET NO. STN 50-530

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

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XXI
XXII
1-2
3/4 3-48
3/4 3-50 through 3/4 3-55
3/4 6-1
3/4 6-19
3/4 6-20
3/4 6-21 through 3/4 6-35
3/4 8-17
3/4 8-19 through 3/4 8-39
3/4 8-40
3/4 8-41 through 3/4 8-47
B 3/4 6-4

Insert

XX
XXI
XXII
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3/4 3-50
3/4 6-1
3/4 6-19
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1.0 DEFINITIONS

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications.

ACTION

1.1 ACTION shall be that part of a specification which prescribes remedial measures required under designated conditions.

AXIAL SHAPE INDEX

1.2 The AXIAL SHAPE INDEX shall be the power generated in the lower half of the core less the power generated in the upper half of the core divided by the sum of these powers.

AZIMUTHAL POWER TILT - T_g

1.3 AZIMUTHAL POWER TILT shall be the power asymmetry between azimuthally symmetric fuel assemblies.

CHANNEL CALIBRATION

1.4 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is calibrated.

CHANNEL CHECK

1.5 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

DEFINITIONS

CHANNEL FUNCTIONAL TEST

1.6 A CHANNEL FUNCTIONAL TEST shall be:

- a. Analog channels - the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions.
- b. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.
- c. Digital computer channels - the exercising of the digital computer hardware using diagnostic programs and the injection of simulated process data into the channel to verify OPERABILITY including alarm and/or trip functions.
- d. Radiological effluent process monitoring channels - the CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is functionally tested.

The CHANNEL FUNCTIONAL TEST shall include adjustment, as necessary, of the alarm, interlock and/or trip setpoints such that the setpoints are within the required range and accuracy.

CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

- a. All penetrations required to be closed during accident conditions are either:
 1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or
 2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.
- b. All equipment hatches are closed and sealed,
- c. Each air lock is in compliance with the requirements of Specification 3.6.1.3,
- d. The containment leakage rates are within the limits of Specification 3.6.1.2, and
- e. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

CONTROLLED LEAKAGE

1.8 Not Applicable.

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement or manipulation of any component within the reactor pressure vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATION shall not preclude completion of movement of a component to a safe conservative position.

TABLE 4.3-5

METEOROLOGICAL MONITORING INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. WIND SPEED		
a. Nominal Elev. 35 feet	D	SA
b. Nominal Elev. 200 feet	D	SA
2. WIND DIRECTION		
a. Nominal Elev. 35 feet	D	SA
b. Nominal Elev. 200 feet	D	SA
3. AIR TEMPERATURE - DELTA T		
a. Nominal Elev. 35 feet - 200 feet	D	SA

INSTRUMENTATION

REMOTE SHUTDOWN SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown system monitoring instrumentation channels shown in Table 3.3-9A and each remote shutdown system disconnect switch and power and control circuit shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

- a. With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9A, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT STANDBY within the next 12 hours.
- b. With one or more remote shutdown system disconnect switches or power or control circuits inoperable, restore the inoperable switch(s)/circuit(s) to OPERABLE status or issue procedure changes per Specification 6.8.3 that identifies alternate disconnect methods or power or control circuits for remote shutdown within 7 days, or be in HOT STANDBY within the next 12 hours.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5 The Remote Shutdown System shall be demonstrated operable:

- a. By performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6 for each remote shutdown monitoring instrumentation channel.
- b. By operation of each remote shutdown system disconnect switch and power and control circuit including the actuated components at least once per 18 months.

TABLE 3.3-9A

REMOTE SHUTDOWN INSTRUMENTATION

<u>INSTRUMENTATION</u>	<u>READOUT LOCATION</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. Log Neutron Power Level	Remote Shutdown Panel	2
2. Reactor Coolant Hot Leg Temperature	Remote Shutdown Panel	1/loop
3. Reactor Coolant Cold Leg Temperature	Remote Shutdown Panel	1/loop
4. Pressurizer Pressure	Remote Shutdown Panel	1
5. Pressurizer Level	Remote Shutdown Panel	2
6. Steam Generator Pressure	Remote Shutdown Panel	2/steam generator
7. Steam Generator Level	Remote Shutdown Panel	2/steam generator
8. Refueling Water Tank Level	Remote Shutdown Panel	2
9. Charging Line Pressure	Remote Shutdown Panel	1
10. Charging Line Flow	Remote Shutdown Panel	1
11. Shutdown Cooling Heat Exchanger Temperatures	Remote Shutdown Panel	2
12. Shutdown Cooling Flow	Remote Shutdown Panel	2
13. Auxiliary Feedwater Flow Rate	Remote Shutdown Panel	2/steam generator

Pages 3/4 3-50 through 3/4 3-55 are not used.

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 1 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* 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 deactivated automatic valves secured in their positions except for valves that are open under administrative control as permitted by 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 49.5 psig and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2b. for all other Type B and C penetrations, the combined leakage rate is less than or equal to $0.60 L_a$.

*Except valves, blind flanges and deactivated 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.

CONTAINMENT SYSTEMS

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_o , 0.10% by weight of the containment air per 24 hours at P_o , 49.5 psig, or
 2. Less than or equal to L_c , 0.05% by weight of the containment air per 24 hours at a reduced pressure of P_c , 24.8 psig.
- b. A combined leakage rate of less than or equal to $0.60 L_o$ for all penetrations and valves subject to Type B and C tests, when pressurized to P_o .

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With either (a) the measured overall integrated containment leakage rate exceeding $0.75 L_o$ or $0.75 L_c$, as applicable, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding $0.60 L_o$, restore the overall integrated leakage rate to less than or equal to $0.75 L_o$, or less than or equal to $0.75 L_c$, as applicable, and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than or equal to $0.60 L_o$ prior to increasing the Reactor Coolant System temperature above 210°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 Part 50 using the methods and provisions of ANSI N45.4 - 1972:

- a. Type A (Overall Integrated Containment Leakage Rate) testing shall be conducted in accordance with the requirements specified in Appendix J to 10 CFR 50, as modified by approved exemptions.

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 Each containment isolation valve shall be OPERABLE*.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

1. With one or more of the isolation valve(s) 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 deactivated automatic valve secured in the isolation position*[†]; or
 - c. Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange**; or
 - d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
 - e. The provisions of Specification 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

4.6.3.1 Each containment isolation valve 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.

4.6.3.2 Each isolation valve used in containment isolation, containment spray, or containment purge shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a. Verifying that on a CIAS, CSAS or SIAS test signal, each isolation valve actuates to its isolation position.
- b. Verifying that on a CPIAS test signal, all containment purge valves actuate to their isolation position.

*Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

**The inoperable isolation valve(s) may be part of a system(s). Isolating the affected penetration(s) may affect the use of the system(s). Consider the technical specification requirements on the affected system(s) and act accordingly.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.3 The isolation time of each power operated or automatic valve used in CIAS, CPIAS, or CSAS shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.4 The containment isolation check valves shall be demonstrated OPERABLE pursuant to 10 CFR 50, Appendix J, with the exception of those check valves footnoted as "Not Type C Tested."

4.6.3.5 The containment isolation valves used as safety/relief, normally open—ESF actuated closed, or required open during accident conditions shall be demonstrated OPERABLE as required by Specification 4.0.5 and the Surveillance Requirements associated with those Limiting Conditions for Operation pertaining to each valve or system in which it is installed. Valves secured*** in their actuated position are considered operable pursuant to this specification.

4.6.3.6 The manual containment isolation valves (normally closed/post accident closed valves) shall be demonstrated OPERABLE pursuant to Surveillance Requirement 4.6.1.1.a of Specification 3.6.1.1.

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

Pages 3/4 6-21 through 3/4 6-35 are not used.

ELECTRICAL POWER SYSTEMS

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.1 Primary and backup containment penetration conductor overcurrent protective devices associated with each containment electrical penetration circuit shall be OPERABLE. The scope of these protective devices excludes those circuits for which credible fault currents would not exceed the electrical penetration design rating.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one or more of the above required containment penetration conductor overcurrent protective devices shown in Table 3.8-2 inoperable:

- a. Restore the protection device(s) to OPERABLE status or deenergize the circuit(s) by tripping the associated backup circuit breaker or racking out or removing the inoperable device within 72 hours and declare the affected system or component inoperable and verify the backup circuit breaker to be tripped or the inoperable circuit breaker racked out at least once per 7 days thereafter; the provisions of Specification 3.0.4 are not applicable to overcurrent devices in circuits which have their backup circuit breakers tripped, or
- b. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.4.1 The above noted primary and backup containment penetration conductor overcurrent protective devices (except fuses) shall be demonstrated OPERABLE:

- a. At least once per 18 months:
 1. By verifying that the medium voltage (4-15 kV) circuit breakers are OPERABLE by selecting, on a rotating basis, at least 10% of the circuit breakers of each voltage level, and performing the following:
 - (a) A CHANNEL CALIBRATION of the associated protection relays, and
 - (b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- (c) For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
2. By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis. Testing of these circuit breakers shall consist of injecting a current with a value equal to 300% of the setpoint (pickup) of the long-time delay trip element and 150% of the setpoint (pickup) of the short-time delay trip element, and verifying that the circuit breaker operates within the time delay band width for that current specified by the manufacturer. The instantaneous element shall be tested by injecting a current for a frame size of 250 amps or less with tolerances of +40%/-25% and a frame size of 400 amps or greater of $\pm 25\%$ and verifying that the circuit breaker trips instantaneously with no apparent time delay. Molded case circuit breaker testing shall also follow this procedure except that generally no more than two trip elements, time delay and instantaneous, will be involved. Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.*
- b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

*This surveillance requirement, otherwise due January 12, 1991, will be performed prior to the end of the second refueling outage or by June 15, 1991.

Pages 3/4 8-19 through 3/4 8-39 are not used.

ELECTRICAL POWER SYSTEMS

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION AND BYPASS DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4.2 The thermal overload protection and bypass devices, integral with the motor starter, of each valve used in safety systems shall be OPERABLE.

APPLICABILITY: Whenever the motor-operated valve is required to be OPERABLE.

ACTION:

With the thermal overload protection for one or more of the above required valves not bypassed continuously or under accident conditions, as applicable, by an OPERABLE integral bypass device, take administrative action to continuously bypass the thermal overload within 8 hours or declare the affected valve(s) inoperable and apply the appropriate ACTION Statement(s) for the affected valve(s).

SURVEILLANCE REQUIREMENTS

4.8.4.2.1 The thermal overload protection for the above required valves shall be verified to be bypassed continuously or under accident conditions, as applicable, by an OPERABLE integral bypass device by the performance of a CHANNEL FUNCTIONAL TEST of the bypass circuitry for those thermal overloads which are normally in force during plant operation and bypassed under accident conditions and by verifying that the thermal overload protection is bypassed for those thermal overloads which are continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing:

- a. At least once per 18 months, and
- b. Following maintenance on the motor starter.

4.8.4.2.2 The thermal overload protection for the above required valves which are continuously bypassed shall be verified to be bypassed following testing during which the thermal overload protection was temporarily placed in force.

Pages 3/4 8-41 through 3/4 8-47 are not used.

CONTAINMENT SYSTEMS

BASES

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.

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 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 safety 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.

CONTAINMENT SYSTEMS

BASES

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment automatic 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 or pressurization of the containment and is consistent with the requirements of GDC 54 through GDC 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

The OPERABILITY of main steam safety valves, main steam atmospheric dump valves, and main steam isolation valves is covered separately. The main steam safety valves have very high pressure setpoints to actuate and are covered by Specification 3/4.7.1.1. The atmospheric dump valves and the main steam isolation valves are covered by Specifications 3/4.7.1.6 and 3/4.7.1.5, respectively.

The opening of locked or sealed closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: 1) stationing an operator, who is in constant communication with control room, at the valve controls, 2) instructing this operator to close these valves in an accident situation, and 3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

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 (or the purge system) 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 use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NO. NPF-41,
AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. NPF-51,
AND AMENDMENT NO. 57 TO FACILITY OPERATING LICENSE NO. NPF-74
ARIZONA PUBLIC SERVICE COMPANY, ET AL.
PALO VERDE NUCLEAR GENERATING STATION, UNIT NOS. 1, 2, AND 3
DOCKET NOS. STN 50-528, STN 50-529, AND STN 50-530

1.0 INTRODUCTION

By letter dated June 17, 1994, as supplemented by letter dated September 21, 1994, the Arizona Public Service Company (APS or the licensee) submitted a request for changes to the Technical Specifications (TS) for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3 (Appendix A to Facility Operating License Nos. NPF-41, NPF-51, and NPF-74, respectively). The Arizona Public Service Company submitted this request on behalf of itself, the Salt River Project Agricultural Improvement and Power District, Southern California Edison Company, El Paso Electric Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority. The proposed amendment would remove five tables of component lists from the Palo Verde Technical Specifications (TS) in accordance with NRC Generic Letter (GL) 91-08, "Removal of Component Lists from Technical Specifications." The affected tables are Table 3.3-9B, Table 3.3-9C, Table 3.6-1, Table 3.8-2, and Table 3.8-3. The references to these tables would also be removed from the text of the TS in accordance with the sample TS change amendment provided by the NRC in GL 91-08. These five removed tables will be incorporated into a new document, which will be administratively controlled according to the change controls provisions of the TS. The supplemental letter provided certain revised TS pages for clarification purposes and did not change the original no significant hazards determination.

2.0 DISCUSSION

Section 50.36 of Title 10 of the *Code of Federal Regulations* established the regulatory requirements related to the content of TS. The rule requires that TS include items in specific categories, including safety limits, limiting conditions for operation, and surveillance requirements; however, the rule does not specify the particular requirements to be included in a plant's TS. The NRC developed criteria, as described in the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58 FR 39132), to determine which of the design conditions and associated surveillances need to be located in the TS. The Final Policy Statement

adopted the subjective statement of the Atomic Safety and Licensing Appeal Board as the basis for the criteria. The Appeal Board stated that:

...there is neither a statutory nor a regulatory requirement that every operational detail set forth in an applicant's safety analysis report (or equivalent) be subject to a Technical Specification, to be included in the license as an absolute condition of operation which is legally binding upon the licensee unless and until changed with specific Commission approval. Rather, as best we can discern it, the contemplation of both the Act and the regulations is the Technical Specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an event giving rise to an immediate threat to the public health and safety.

Briefly, the criteria in the Final Policy Statement related to TS content are (1) detection of abnormal degradation of the reactor coolant pressure boundary, (2) boundary conditions for design-basis accidents and transients, (3) primary success paths to prevent or mitigate design basis accidents and transients, and (4) functions determined to be important to risk or operating experience. The Commission's final policy statement acknowledged that its implementation may result in the relocation of existing TS requirements to licensee-controlled documents and programs.

3.0 EVALUATION

In accordance with GL 91-08, and 10 CFR 50.90, the licensee proposed the following changes to the Palo Verde TS. The licensee's proposed changes are discussed in the order the associated TS appears in the Palo Verde TS. The staff's evaluation and conclusion follow each proposed change.

- (1) The licensee proposed changes to TS index pages to make editorial corrections associated with the proposed TS changes to reflect the deletion of tables which contain component lists or to reflect renumbering of pages due to deletion of large lists of component tables.

The staff concludes that the proposed changes are acceptable because they are administrative in nature only (reflecting the TS changes evaluated below).

- (2) The licensee proposed to make changes to TS Definition 1.7, "Containment Integrity." The licensee proposed to delete references to TS Table 3.6-1 and to clarify the revised TS.

The proposed changes to the TS Definition are administrative or editorial in nature (reflecting the TS changes evaluated below) or provide clarification to existing TS (no technical change to the current requirements). Therefore, the staff finds the licensee's proposed changes acceptable.

- (3) The licensee has proposed the removal of Table 3.3-B, "Remote Shutdown Disconnect Switches," and Table 3.3-C, "Remote Shutdown Control Circuits," from TS 3.3.3.5.

The licensee's proposal is consistent with the guidance of GL 91-08. The content of these two TS tables is not changed, only their location. Therefore, since the proposal does not technically change the current intent of the TS and is in accordance with the guidance provided in GL 91-08, the change is acceptable.

The licensee's original marked-up TS pages for this change inadvertently also showed Table 3.3-A as being deleted. The licensee corrected this page by providing a new marked-up page by letter of September 21, 1994. The new page corrected this administrative error and clarified the wording of the limiting condition for operation (LCO). The staff proposed a minor editorial change to the wording of TS 3.3.3.5 as submitted by the licensee's supplemental letter dated September 21, 1994. In a phone discussion on October 26, 1994, the licensee requested that the staff's revised wording be used to further clarify operability requirements. These changes are administrative in nature and did not change the original no significant hazards determination.

- (4) The licensee has proposed the removal of Table 3.6-1, "Containment Isolation Valves," which is referenced in TS 3/4.6.3. With the removal of this table, the licensee has proposed to include the following statement of the LCO under TS 3/4.6.3:

Each containment isolation valve shall be OPERABLE.

In addition, the licensee proposed to revise the definition of containment integrity and to delete all references to Table 3.6-1 under the action requirements of TS 3.6.3, TS 4.6.3.1, and TS 4.6.1.1. Technical Specification 4.6.1.1 and the definition of containment integrity refer to TS 3.6.3 for an exception regarding the use of administrative controls to maintain valves in the open position. This exception, which was contained in the table (now removed from the TS), is now a footnote to the LCO. With the removal of the reference to Table 3.6-1, the licensee has proposed to state this exception as follows:

...except for valves that are open under administrative control as permitted by Specification 3.6.3.

The licensee has proposed to revise the surveillance requirement of TS 4.6.3.1 to state "Each containment isolation valve..." rather than stating the requirements in relation to the valves specified in Table 3.6-1.

The licensee has proposed to revise the surveillance requirement of TS 4.6.3.2 to state "Each isolation valve used in containment isolation,

containment spray, or containment purge...", instead of referring to the various sections of Table 3.6-1.

The licensee has proposed to revise the surveillance requirement of TS 4.6.3.3 to state "The isolation time of each power operated or automatic valve used in CIAS, CPIAS, or CSAS...", instead of referring to the various sections of Table 3.6-1.

The licensee has proposed to revise the surveillance requirement of TS 4.6.3.4 to state "The containment isolation check valves...", rather than stating the requirements in relation to the valves specified in Section D of Table 3.6-1.

The licensee proposed to revise the surveillance requirement of TS 4.6.3.5 to state "The containment isolation valves used as safety/relief, normally open-ESF actuated closed, or required open during accident conditions...", instead of referring to the various sections of Table 3.6-1.

The licensee has proposed to revise the surveillance requirement of TS 4.6.3.6 to state "The manual containment isolation valves (normally closed post accident closed valves)...", instead of referring to the various sections of Table 3.6-1.

The above changes are consistent with the guidance in GL 91-08 and are, therefore, acceptable.

Additionally, because Table 3.6-1 notes that the provisions of Specification 3.0.4 are not applicable to specific valves, the licensee proposed to add the following statement to the LCO for TS 3.6.4:

The provisions of Specification 3.0.4 do not apply.

The exception will now apply to all containment isolation valves rather than to specific valves. The change is acceptable because, as noted in GL 91-08, it is consistent with the guidance provided in GL 87-09. The table of containment isolation valves identified specific manually operated locked or sealed closed valves with a footnote stating that these valves may be opened intermittently under administrative control. These valves are locked or sealed closed consistent with the regulatory requirements for manually operated valves that are used as containment isolation valves. Because opening these valves would be contrary to the operability requirements of these valves, the following footnote to the LCO has been proposed:

Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

This change is consistent with the guidance in GL 91-08 and is, therefore, acceptable.

- (5) The licensee has proposed the removal of Table 3.8-2, "Containment Penetration Conductor Overcurrent Protective Devices," which is referenced in TS 3/4.8.4. With the removal of this table, the licensee has proposed to include the following statement for the LCO under TS 3.8.4.1:

Primary and backup containment penetration conductor overcurrent protective devices associated with each containment electrical penetration circuit shall be OPERABLE. The scope of these protective devices excludes those circuits for which credible fault currents would not exceed the electrical penetration design rating.

In addition, the licensee has proposed to revise TS 4.8.4.1 to remove the reference to Table 3.8-2. The surveillance requirement for TS 4.8.4.1 has been revised to state the following:

The above noted primary and backup containment penetration conductor overcurrent protective devices (except fuses) shall be demonstrated OPERABLE:

The licensee has proposed changes to the above TS that are consistent with the guidance provided in GL 91-08 and are, therefore, acceptable.

- (6) The licensee has proposed the removal of Table 3.8-3, "Motor-Operated Valves Thermal Overload Protection And/Or Bypass Devices," which provides a list of valves with bypass devices that is referenced in TS 3.8.4.2. By letter dated September 21, 1994, the licensee provided the new marked-up page which corrects an administrative error and did not change the original no significant hazards determination. The licensee has proposed to include the following statement of the LCO under TS 3.8.4.2:

The thermal overload protection and bypass devices, integral with the motor starter, of each valve used in safety systems shall be OPERABLE.

The licensee's proposal is consistent with the guidance of GL 91-08 and does not technically change the intent of the current TS and is, therefore, acceptable.

4.0 SUMMARY

The staff's review of the proposed changes determined that the removal of these tables does not eliminate the requirements for the licensee to ensure that the system, structure, or component is capable of performing its safety function. Although these tables are removed from the TS and incorporated into the Palo Verde administratively controlled document, the licensee must continue to evaluate any plant modifications that affect any of these components in accordance with 10 CFR 50.59. Should the licensee's determination conclude that an unreviewed safety question is involved, due to

either (1) an increase in the probability or consequences of accidents or malfunctions of equipment important to safety, (2) the creation of a possibility for an accident or malfunction of a different type than any evaluated previously, or (3) a reduction in the margin of safety, NRC approval and a license amendment would be required prior to implementation of the change. NRC inspection and enforcement programs also enable the staff to monitor facility changes and licensee adherence to Updated Final Safety Analysis commitments and to take any remedial action that may be appropriate.

The staff's review concluded that 10 CFR 50.36 does not require these tables to be retained in TS. Requirements related to operability, applicability, and surveillance requirements, including performance of testing to ensure operability, are retained due to the importance in mitigating the consequences of an accident. However, the staff determined that the inclusion of these tables is an operational detail related to the licensee's safety analyses, which are adequately controlled by the requirements of 10 CFR 50.59. Therefore, the continued processing of license amendments related to revisions of the affected these tables, where the revisions to those requirements do not involve an unreviewed safety question under 10 CFR 50.59, would afford no significant benefit with regard to protecting the public health and safety.

The staff has concluded, therefore, that removal of these tables is acceptable because (1) their inclusion in technical specifications is not specifically required by 10 CFR 50.36 or other regulations, (2) these five tables have been remove from the TS and incorporated into the Palo Verde administratively controlled document, are adequately controlled by 10 CFR 50.59, and their inclusion in the TS is not required to avert an immediate threat to the public health and safety, and (3) changes that are deemed to involve an unreviewed safety question will require prior NRC approval in accordance with 10 CFR 50.59(c).

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Arizona State official was notified of the proposed issuance of the amendments. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluent that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 37061). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no

environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: October 31, 1994