# TECHNICAL SPECIFICATIONS

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Amendment No. ~~11,15,27,32,38,52,54,57,67,80,81,86,146,152,167,169~~

2.0 **LIMITING CONDITIONS FOR OPERATION**

2.1 Reactor Coolant System (Continued)

2.1.7 Pressurizer Operability

Applicability

Applies to the status of the pressurizer and pressurizer heaters.

Objective

To specify minimum requirements pertaining to the pressurizer water volume and availability of heaters for accident conditions.

Specifications

(1) The pressurizer shall be operable with at least 150 KW of pressurizer heaters, and pressurizer inventory shall be maintained in a range of level 40.5% to 69.2%.

a. With the pressurizer inoperable due to an inoperable emergency power supply to the pressurizer heaters either restore the inoperable emergency power supply within 72 hours or be in HOT SHUTDOWN within the following 12 hours. With the pressurizer otherwise inoperable, be in HOT SHUTDOWN within the following 12 hours. This is applicable for Modes 1 and 2.

b. With the pressurizer level outside the above range, either restore the level within the specified limits within ~~2 hours or be in~~ HOT SHUTDOWN within the following 12 hours. This is applicable for Modes 1 and 2~~, except during monthly testing of the pressurizer level control circuit~~.

Basis

The requirement that 150 KW of pressurizer heaters and their associated controls be capable of being supplied electrical power from an emergency bus provides assurance that these heaters can be energized during a loss of offsite power condition to maintain natural circulation at HOT SHUTDOWN. Either diesel generator is equipped with 225 KW of heater capacity. Either diesel will fulfill the minimum requirements of this specification. The level should be maintained above the lower limit to prevent heater cutoff and the upper limit should not be exceeded to prevent going solid or reducing the effectiveness of the pressurizer sprays by immersion during an RCS swell transient.



Amendment No. ~~54,76~~

## 3.0 SURVEILLANCE REQUIREMENTS

### 3.1 Instrumentation and Control

Applicability

Applies to the reactor protective system and other critical instrumentation and controls.

Objective

To specify the minimum frequency and type of surveillance to be applied to critical plant instrumentation and controls.

Specifications

Calibration, testing and checking of instrument channels, reactor protective system and engineered safeguards system logic channels and miscellaneous instrument systems and controls shall be performed as specified in Tables 3-1 to 3-3a.

Basis

Failures such as blown instrument fuses, defective indicators, and faulted amplifiers which result in "upscale" or "downscale" indication can be easily recognized by simple observation of the functioning of an instrument or system. Furthermore, such failures are, in many cases, revealed by alarm or annunciator action and a check supplements this type of built-in surveillance.

If the channels are normally off scale during times when Surveillance is required, the CHANNEL CHECK will only verify that they are off scale in the same direction. Off scale low current loop channels are verified to be reading at the bottom of the range and not failed downscale.

Based on the District's experience in operation of conventional power plants and on reported nuclear plant experience, a checking frequency of once-per-shift is deemed adequate for reactor and steam system instrumentation. Calibrations are performed to ensure the presentation and acquisition of accurate information.

The power range safety channels are calibrated (heat balance adjustment only) daily against a calorimetric balance standard to account for errors induced by changing rod patterns and core physics parameters.

Other channels, subject only to the "drift" errors, can be expected to remain within acceptable tolerances if recalibration is performed on a refueling frequency.



Amendment No. ~~9,122,125,157~~

## 3.0 SURVEILLANCE REQUIREMENTS

3.1 Instrumentation and Control (Continued)

Substantial calibration shifts within a channel (essentially a channel failure) will be revealed during routine checking and testing procedures.

The minimum calibration frequencies of once-per-day (heat balance adjustment only) for the power range safety channels, and once each refueling shutdown for the process system channels, are considered adequate.

The minimum testing frequency for those instrument channels connected to the Reactor Protective System and Engineered Safety Features is based on ABB/CE probabilistic risk analyses and the accumulation of specific operating history. The quarterly frequency for the channel functional tests for these systems is based on the analyses presented in the NRC approved topical report CEN-327-A, "RPS/ESFAS Extended Test Interval Evaluation," as supplemented, and OPPD's Engineering Analysis EA-FC-93-064, "RPS/ESF Functional Test Drift Analysis."

The low temperature setpoint power operated relief valve (PORV) CHANNEL FUNCTIONAL TEST verifies operability of the actuation circuitry using the installed test switches. PORV actuation could depressurize the reactor coolant system and is not required.



Amendment No. ~~163~~

## TABLE 3-1

## MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF REACTOR PROTECTIVE SYSTEM

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 1. | Power Range Safety Channels | a. | Check: | S | a. | ~~Comparison of four power channel readings for both neutron flux and thermal power.~~<br>1) CHANNEL CHECK<br>2) CHANNEL CHECK |
| | | | 1) Neutron Flux<br>2) Thermal Power | | | |
| | | b. | Adjustment | $D^{(4)(3)}$ | b. | Channel adjustment to agree with heat balance calculation. |
| | | c. | ~~Calibrate and~~ Test | $Q^{(2)(1)}$ | c. | CHANNEL FUNCTIONAL TEST ~~Internal test signal to verify trips, alarms, and Test permissives and auctioneer circuits.~~ |
| 2. | Wide-Range Logarithmic Neutron Monitors | a. | Check | S | a. | CHANNEL CHECK ~~Comparison of four wide range readings.~~ |
| | | b. | $Test^{(3)(2)}$ | P | b. | CHANNEL FUNCTIONAL TEST ~~Internal test signals to verify SUR indication and trip, power level permissives, instrument accuracy.~~ |
| 3. | Reactor Coolant Flow | a. | Check | S | a. | CHANNEL CHECK ~~Comparison of four separate total flow indications.~~ |
| | | b. | Test ~~Calibrate~~ | $Q^{(1)}$~~R~~ | b. | CHANNEL FUNCTIONAL TEST~~Known differential pressure applied to sensors to calibrate all loop devices.~~ |
| | | c. | Calibrate ~~Test~~ | RQ~~(2)~~ | c. | CHANNEL CALIBRATION ~~Bistable trip tester?~~ |



Amendment No. ~~60,163~~

**TABLE 3-1** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF REACTOR PROTECTIVE SYSTEM**

| | Channel Description | Surveillance Function | Frequency | Surveillance Method |
|---|---|---|---|---|
| 4. | Thermal Margin/Low Pressure | a. Check:<br>1) Pressure Setpoint ~~Temperature Input~~ | S | a. ~~Check:~~<br>1) CHANNEL CHECK ~~Comparison of four separate calculated trip pressure set point indications.~~ |
| | | 2) Pressure Input | | 2) CHANNEL CHECK ~~Comparison of four pressurizer pressure indications~~ (same as 5(a) below). |
| | | ~~b. Calibrate:~~<br>~~1) Temperature Input~~<br>~~2) Pressure Input~~ | ~~R~~ | ~~b. Calibrate:~~<br>~~1) Known resistance substituted for RTD coincident with known pressure input.~~<br>~~2) Known pressure applied to sensor coincident with above temperature calibrations.~~ |
| | | ~~b.~~ c. Test | $Q^{(2)(3)}$ | ~~b.~~ c. CHANNEL FUNCTIONAL TEST ~~Bistable trip tester.~~[2] |
| | | c. Calibrate:<br>1) Temperature Input | R | c.<br>1) CHANNEL CALIBRATION |
| | | 2) Pressure Input | | 2) CHANNEL CALIBRATION |
| 5. | High-Pressurizer Pressure | a. Check | S | a. CHANNEL CHECK ~~Comparison of four separate pressure~~ ~~indications.~~ |
| | | b. ~~Test~~ ~~Calibrate~~ | $Q^{(1)}R$ | b. CHANNEL FUNCTIONAL TEST ~~Known pressure applied to sensors.~~ |
| | | c. Calibrate ~~Test~~ | $RQ^{(2)}$ | c. CHANNEL CALIBRATION ~~Bistable trip tester.~~[2] |

**TABLE 3-1** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF REACTOR PROTECTIVE SYSTEM**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 6. | Steam Generator Level | a. | Check | S | a. | CHANNEL CHECK ~~Comparison of four level indications per generator.~~ |
| | | b. | ~~Test Calibrate~~ | ~~$Q^{(1)}R$~~ | b. | CHANNEL FUNCTIONAL TEST ~~Known differential pressure applied to sensors.~~ |
| | | c. | ~~Calibrate Test~~ | ~~$RQ^{(2)}$~~ | c. | CHANNEL CALIBRATION ~~Bistable trip tester.~~[1] |
| 7. | Steam Generator Pressure | a. | Check | S | a. | CHANNEL CHECK ~~Comparison of four pressure indications per generator.~~ |
| | | b. | ~~Test Calibrate~~ | ~~$Q^{(1)}R$~~ | b. | CHANNEL FUNCTIONAL TEST ~~Known pressure applied to sensors.~~ |
| | | c. | ~~Calibrate Test~~ | ~~$RQ^{(2)}$~~ | c. | CHANNEL CALIBRATION ~~Bistable trip tester.~~[1] |
| 8. | Containment Pressure | a. | ~~Test Calibrate~~ | ~~$Q^{(1)}R$~~ | a. | CHANNEL FUNCTIONAL TEST ~~Known pressure applied to sensors.~~ |
| | | b. | ~~Calibrate Test~~ | ~~$RQ^{(2)}$~~ | b. | CHANNEL CALIBRATION ~~Simulate pressure switch action.~~ |
| 9. | Loss of Load | a. | Test | P | a. | CHANNEL FUNCTIONAL TEST ~~Manually trip 2/4 turbine main steam stop valves.~~ |
| 10. | Manual Trips | a. | Test | P | a. | CHANNEL FUNCTIONAL TEST ~~Manually test both circuits.~~ |
| 11. | Steam Generator Differential Pressure | a. | Check | S | a. | CHANNEL CHECK ~~Comparison of four differential pressure indications between the two steam generators.~~ |
| | | b. | ~~Test Calibrate~~ | ~~$Q^{(1)}R$~~ | b. | CHANNEL FUNCTIONAL TEST ~~Known differential pressure applied to sensors.~~ |
| | | c. | ~~Calibrate Test~~ | ~~$RQ^{(2)}$~~ | c. | CHANNEL CALIBRATION ~~Bistable trip test.~~[1] |

**TABLE 3-1** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF REACTOR PROTECTIVE SYSTEM**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 12. | Reactor Protection System Logic Units | a. | Test | ~~Q(2)(3)~~ | a. | CHANNEL FUNCTIONAL TEST ~~Internal test circuits check logic networks and clutch power contractors.~~ |
| 13. | Axial Power Distribution | a. | Check: | S | a. | |
| | | | 1) Axial Shape Index Indication | | | 1.) CHANNEL CHECK ~~Comparison of four separate axial index indications.~~ |
| | | | 2) Upper Trip Setpoint Indication | | | 2.) CHANNEL CHECK ~~Comparison of four separate upper trip set point indications.~~ |
| | | | 3) Lower Trip Setpoint Indication | | | 3.) CHANNEL CHECK ~~Comparison of four separate lower trip set point indications.~~ |
| | | b. | ~~Calibrate~~ Test | ~~R~~ Q(1) | b. | CHANNEL FUNCTIONAL TEST ~~Known currents applied to input of axial shape index calculator.~~ |
| | | c. | ~~Test~~ Calibrate | Q(2) ~~R~~ | c. | CHANNEL CALIBRATION ~~Trip test known axial shape index applied to input of axial shape index calculator.~~ |

Notes: ~~(1) The bistable trip tester injects a signal into the bistable and provides a precision readout of the trip set point.~~

(1)~~(2)~~ The quarterly tests will be done on only one of four channels at a time to prevent reactor trip.

(2)~~(3)~~ Calibrate using built-in simulated signals.

(3)~~(4)~~ Not required unless the reactor is in the power operating condition and is therefore not required during plant startup and shutdown periods.



Amendment No. ~~77, 122,~~ ~~163~~

## TABLE 3-2

## MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF ENGINEERED SAFETY FEATURES, INSTRUMENTATION AND CONTROLS

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 1. | Pressurizer Pressure Low | a. | Check | S | a. | CHANNEL CHECK ~~Comparison of four separate pressure indications.~~ |
| | | b. | ~~Calibrate~~ Test | Q[1]P[4]R | b. | CHANNEL FUNCTIONAL TEST ~~Known pressure applied to sensors and PPLS actuation and blocking logic verified.~~ |
| | | c. | ~~Test~~ Calibrate | RQ[1]P[4] | c. | CHANNEL CALIBRATION ~~Signal to meter relay adjusted with test device to trip one channel at a time.~~ |
| 2. | Pressurizer Low Pressure Blocking Circuit | a. | Calibrate | R | a. | CHANNEL CALIBRATION ~~Part of 1(b) above.~~ |
| 3. | Safety Injection Actuation ~~Logic~~ | a. | Test | Q | a. | CHANNEL FUNCTIONAL TEST (Simulation of PPLS or CPHS 2/4 logic) ~~using built in testing system. Both "standby power" and "no standby power" circuits will be tested for A and B channels. Test will verify functioning of initiation circuits of all equipment normally operated by safety feature actuation signals.~~ |
| | | b. | Test | R[7] | b. | CHANNEL FUNCTIONAL TEST ~~Complete automatic test initiated sensor operation (Item 1(b) or 4(b)) and including all normal operation.~~ |



Amendment No. ~~54,163~~

**TABLE 3-2** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF ENGINFERED SAFETY FEATURES, INSTRUMENTATION AND CONTROLS**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 4. | Containment Pressure High Signal | a. | Test ~~Calibrate~~ | Q ~~R~~ | a. | CHANNEL FUNCTIONAL TEST~~Known pressure applied to sensors and CPHS actuation logic verified.~~ |
| | | b. | Calibrate ~~Test~~ | R ~~Q~~ | b. | CHANNEL CALIBRATION~~Pressure switch operation simulated one circuit at a time.~~ |
| 5. | Containment Spray Actuation Logic | a. | Test | Q | a. | CHANNEL FUNCTIONAL TEST (Simulation of PPLS and CPHS 2/4 logic) ~~using built in testing system. Both "standby power" and "no stand by power" circuits will be tested for A and B channels. Test will verify functioning of initiation circuits of all equipment normally operated by safety feature actuation signals.~~ |
| | | b. | Test | R(7) | b. | CHANNEL FUNCTIONAL TEST ~~Complete automatic test initiated sensor operation (Item 1(b) and 4(b)) and including all normal automatic operations.~~ |
| 6. | Containment Radiation High Signal(2) | a. | Check | D | a. | CHANNEL CHECK |



Amendment No. ~~152~~,~~163~~,~~173~~

**TABLE 3-2** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF ENGINEERED SAFETY FEATURES, INSTRUMENTATION AND CONTROLS**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 6. | (continued) | b. | Test | Q | b. | CHANNEL FUNCTIONAL TEST |
| | | c. | Calibrate | R | c. | Secondary and Electronic Calibration performed at refueling frequency. Primary calibration performed with exposure to radioactive sources only when required by the secondary and electronic calibration. |
| 7. | Manual Safety Injection ~~Initiation~~ Actuation | a. | Test | R | a. | CHANNEL FUNCTIONAL TEST ~~Manual initiation.~~ |
| 8. | Manual Containment Isolation ~~Initiation~~ Actuation | a. | ~~Test~~ Check | R | a. | ~~Manual initiation.~~ Observe isolation valves closure. |
| | | b. | ~~Check~~ Test | R | b. | ~~Observe isolation valves closure.~~ CHANNEL FUNCTIONAL TEST |
| 9. | Manual ~~Initiation~~ Containment ~~Containment~~ Spray Actuation | a. | Test | R | a. | CHANNEL FUNCTIONAL TEST ~~Manual switch operation; pumps and valves tested separately.~~ |
| 10. | Automatic Load Sequencers | a. | Test | Q | a. | CHANNEL FUNCTIONAL TEST ~~Proper operation will be verified during safety feature actuation test of Item 3(a) above.~~ |
| 11. | Diesel Testing | See Technical Specification 3.7 | | | | |



Amendment No. ~~54,111,152,163,173~~

**TABLE 3-2** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF ENGINEERED SAFETY FEATURES, INSTRUMENTATION AND CONTROLS**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 12. | Diesel Fuel Transfer Pump | a. | Test | M | a. | Pump run to refill day tank. |
| 13. | SIRW Tank Low Level Signal | a. | Check | S | a. | CHANNEL CHECK ~~Verify level indication between independent channels.~~ |
| | | b. | Test | Q | b. | CHANNEL FUNCTIONAL TEST ~~A test pressure simulating the tank level is applied to each tank bubbler, one at a time.~~ |
| | | c. | Calibrate | R | c. | CHANNEL CALIBRATION ~~Known level signal applied to sensors and STLS logic verified.~~ |
| 14. | Safety Injection Tank Level and Pressure ~~Instruments~~ | a. | Check | S[5] | a. | Verify that level and pressure are within limits. |

**TABLE 3-2** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF ENGINEERED SAFETY FEATURES, INSTRUMENTATION AND CONTROLS**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 14. | (continued) | b. | Calibrate | R | b. | CHANNEL CALIBRATION ~~Known pressure and differential pressure applied to pressure and level sensors.~~ |
| 15. | Boric Acid Tank Level | a. | Check | W | a. | Verify that level is within limits. |
| 16. | Boric Acid Tank Temperature | a. | Check | W | a. | Verify that temperature is within limits. |
| 17. | Steam Generaior Low Pressure Signal (SGLS) | a. | Check | S | a. | CHANNEL CHECK ~~Compare four independent pressure indications.~~ |
| | | b. | Test | Q(3) | b. | CHANNEL FUNCTIONAL TEST ~~Simulated signal.~~ |
| | | c. | Calibrate | R | c. | CHANNEL CALIBRATION ~~Known pressure applied to sensors to verify trip points, logic operation, block permissive, auto reset and valve closures.~~ |



Amendment No. ~~131,163,172~~

**TABLE 3-2** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF ENGINEERED SAFETY FEATURES, INSTRUMENTATION AND CONTROLS**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 18. | SIRW Tank Temperature | a. | Check | D(6) | a. | Verify that temperature is within limits. |
| | | b. | Test | R | b. | Measure temperature of SIRW tank with standard laboratory instruments. |
| 19. | Manual Recirculation Actuation ~~Switches~~ | a. | Test | R | a. | CHANNEL FUNCTIONAL TEST ~~Manual initiation.~~ |
| 20. | Recirculation Actuation Logic | a. | Test | Q | a. | CHANNEL FUNCTIONAL TEST ~~Part of test 3(a) using built in testing Logic systems to initiate STLS.~~ |
| | | b. | Test | R(7) | b. | CHANNEL FUNCTIONAL TEST ~~Complete automatic test initiated sensor operation.~~ |
| 21. | 4.16 KV Emergency Bus Low Voltage (Loss of Voltage and Degraded Voltage) Actuation Logic | a. | Check | S | a. | Verify voltage readings are above alarm initiation on degraded voltage level - supervisory lights "on". |
| | | b. | Test | Q | b. | CHANNEL FUNCTIONAL TEST (Undervoltage relay) ~~operation simulated one circuit at a time.~~ |
| | | c. | Calibrate | R | c. | CHANNEL CALIBRATION ~~Known voltage applied to sensors and circuit breaker trip actuation logic verified.~~ |
| 22. | Manual Emergency Off-site Power Low Trip Actuation | a. | Test | R | a. | CHANNEL FUNCTIONAL TEST |

**TABLE 3-2** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF ENGINEERED SAFETY FEATURES, INSTRUMENTATION AND CONTROLS**

| Channel Description | Surveillance Function | Frequency | Surveillance Method |
|---|---|---|---|
| ~~22~~ 23. Auxiliary Feedwater | | | |
| ~~a. Steam Generator Water Level Low (Wide Range)~~ | ~~a. Check~~ | ~~S~~ | ~~a. Compare independent level readings.~~ |
| | ~~b. Calibrate~~ | ~~R~~ | ~~b. Known signal applied to sensor.~~ |
| ~~b. Steam Generator Pressure Low~~ | ~~a. Check~~ | ~~S~~ | ~~a. Compare independent pressure readings.~~ |
| | ~~b. Calibrate~~ | ~~R~~ | ~~b. Known signal applied to sensor.~~ |
| ~~c. Steam Generator Differential Pressure High~~ | ~~a. Calibrate~~ | ~~R~~ | ~~a. Known signal applied to sensor.~~ |
| ~~d. Actuation Circuitry~~ | ~~a. Test~~ | ~~Q~~ | ~~a. Functional check of initiation circuits.~~ |
| | ~~b. Test~~ | ~~R~~ | ~~b. System functional test of AFW initiation circuits.~~ |
| | a. Check: | S | a. |
| | 1) Steam Generator Water Level Low (Wide Range) | | 1) CHANNEL CHECK |
| | 2) Steam Generator Pressure Low | | 2) CHANNEL CHECK |
| | b. Test: | QR(7) | b. |
| | 1) Actuation Logic | | 1) CHANNEL FUNCTIONAL TEST |
| | c. Calibrate: | R | c. |
| | 1) Steam Generator Water Level Low (Wide Range) | | 1) CHANNEL CALIBRATION |
| | 2) Steam Generator Pressure Low | | 2) CHANNEL CALIBRATION |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 3) | Steam Generator Differential Pressure High | | 3) | CHANNEL CALIBRATION |
| 24. | Manual Auxiliary Feedwater Actuation | a. | Test | R | a. | CHANNEL FUNCTIONAL TEST |

NOTES:
(1) Not required unless pressurizer pressure is above 1700 psia.
(2) CRHS monitors are the containment atmosphere gaseous radiation monitor and the Auxiliary Building Exhaust Stack gaseous radiation monitor.
(3) Not required unless steam generator pressure is above 600 psia.
(4) QP - Quarterly during designated modes and prior to taking the reactor critical if not completed within the previous 92 days (not applicable to a fast trip recovery).
(5) Not required to be done on a SIT with inoperable level and/or pressure instrumentation.
(6) Not required when outside ambient air temperature is greater than 50°F and less than 105°F.
(7) Tests backup channels such as derived circuits and equipment that cannot be tested when the plant is at power.

**TABLE 3-3** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF MISCELLANEOUS INSTRUMENTATION AND CONTROLS**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 4. | DELETED | | | | | |
| 5. | Primary to Secondary Leak-Rate Detection Radiation Monitors (RM-054A/B, RM-057) | a. | Check | D | a. | CHANNEL CHECK |
| | | b. | Test | Q | b. | CHANNEL FUNCTIONAL TEST |
| | | c. | Calibrate | R | c. | Secondary and Electronic calibration performed at refueling frequency. Primary Calibration performed with exposure to radioactive sources only when required by the secondary and electronic calibration. |
| 6. | Pressurizer Level ~~Instruments~~ | a. | Check | S | a. | Verify that level is within limits. ~~Comparison of independent level readings.~~ |
| | | b. | ~~Calibrate~~ Check | ~~R~~ M | b. | CHANNEL CHECK ~~Known differential pressure applied to sensor.~~ |
| | | c. | ~~Test~~ Calibrate | ~~M~~ R | c. | CHANNEL CALIBRATION ~~Signal to alarm meter relay adjusted with test device to verify setting.~~ |
| 7. | CEA Drive System Interlocks | a. | Test | R | a. | Verify proper operation of all CEDM system interlocks, using simulated signals where necessary. |
| | | b. | Test | P | b. | If haven't been checked for three months and plant is shutdown. |

**TABLE 3-3** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF MISCELLANEOUS INSTRUMENTATION AND CONTROLS**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 8. | Dropped CEA Indication | a. | Test | R | a. | Insert a negative rate of change power signal to all four Power Range Safety Channels to test alarm. |
| | | b. | Test | R | b. | Insert CEA's below lower electrical limit to test dropped CEA alarm. |
| 9. | Calorimetric Instrumentation | a. | Calibrate | R | a. | CHANNEL CALIBRATION ~~Apply known d/p to feedwater flow sensors.~~ |
| 10. | Control Room Ventilation | a. | Test | R | a. | Check damper operation for DBA mode. |
| | | b. | Test | R | b. | Check control room for positive pressure. |
| 11. | Containment Humidity Detector | a. | Test | R | a. | CHANNEL FUNCTIONAL TEST ~~Place sensor in a known high humidity atmosphere.~~ |
| 12. | Interlocks-Isolation Valves on Shutdown Cooling Line | a. | Test | R | a. | CHANNEL FUNCTIONAL TEST ~~Known pressure of 265 psia applied to both pressure transmitters.~~ |
| 13. | Control Room Thermometer | a. | Test | R | a. | Compare reading with calibrated thermometer. If not within $\pm$ 2°F, replace. |

**TABLE 3-3** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF MISCELLANEOUS INSTRUMENTATION AND CONTROLS**

| | Channel Description | | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|---|
| 14. | Nuclear Detector Well Cooling Annulus Exit Air Temperature Detectors | a. | Check | S | a. | CHANNEL CHECK ~~Comparison of independent temperature readings.~~ |
| | | b. | Calibrate | R | b. | CHANNEL CALIBRATION ~~Calibrate with known temperature.~~ |
| 15. | Reactor Coolant System Flow | a. | Check | M | a. | Calculation of reactor coolant flow rate. |
| 16. | Pressurizer Pressure | a. | Check | S | a. | CHANNEL CHECK ~~Comparison of independent pressure readings.~~ |
| 17. | Reactor Coolant Inlet Temperature | a. | Check | S | a. | CHANNEL CHECK ~~Comparison of independent temperature readings.~~ |
| 18. | Low-Temperature Set-point Power-Operated Relief Valves | a. | Test | PM | a. | CHANNEL FUNCTIONAL TEST (excluding actuation) ~~Verify ope ability of actuation circuitry for low temperature setpoint power operated relief valves by utilization of installed test switches.~~ |
| | | b. | Calibrate | R | b. | CHANNEL CALIBRATION ~~Calibrate temperature and pressure channels.~~ |



Amendment No. ~~8,32,39,96~~

## MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF MISCELLANEOUS INSTRUMENTATION AND CONTROLS

| | Channel Description | | Surveillance Function | Frequency | Surveillance Method |
|---|---|---|---|---|---|
| 19. | Auxiliary Feedwater Flow | a. | Check | M | CHANNEL CHECK ~~Channel check.~~ |
| | | b. | Calibrate | R | CHANNEL CALIBRATION ~~Known pressure inputs.~~ |
| 20. | Subcooled Margin Monitor | a. | Check | M | CHANNEL CHECK ~~Channel check.~~ |
| | | b. | Calibrate | R | CHANNEL CALIBRATION ~~Known pressure inputs and known resistance substituted for RTD inputs.~~ |
| 21. | PORV Operation and Acoustic Position Indication | a. | ~~Test Check~~ | M | CHANNEL FUNCTIONAL TEST ~~Channel check.~~ |
| | | b. | Calibrate | R | CHANNEL CALIBRATION ~~Apply acoustic input.~~ |
| | | | ~~Verify~~ | ~~R~~ | ~~Operation on emergency power supply.~~ |
| 22. | PORV Block Valve Operation and Position Indication | a. | Check | Q | Cycle valve. Valve is exempt from testing when it has been closed to comply with LCO Action Statement 2.1.6(5)a. |
| | | b. | Calibrate | R | Check valve stroke against limit switch position. |
| | | | ~~Verify~~ | ~~R~~ | ~~Operability on emergency power supply.~~ |
| 23. | Safety Valve Acoustic Position Indication | a. | ~~Test Check~~ | M | CHANNEL FUNCTIONAL TEST ~~Circuit check.~~ |
| | | b. | Calibration | R | CHANNEL CALIBRATION ~~Apply acoustic input.~~ |
| 24. | PORV/Safety Valve Tail Pipe Temperature | a. | Check | M | CHANNEL CHECK ~~Circuit check.~~ |
| | | b. | Calibrate | R | CHANNEL CALIBRATION ~~Apply known input.~~ |

**TABLE 3-3** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF MISCELLANEOUS INSTRUMENTATION AND CONTROLS**

| | Channel Description | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|
| 25. | Containment Purge Isolation Valves (PCV-742A, B, C, & D) | a. Check | M | a. | Verify valve position using control room indication. |
| 26. | Containment Hydrogen Monitors (VA-81A&B) | a. Check | M | a. | CHANNEL CHECK ~~Comparison of readings from redundant channels.~~ |
| | | b. Test | Q | b. | Calibrate span/zero using sample gas and check flow rates. |
| | | c. Calibrate | R | c. | CHANNEL CALIBRATION ~~Calibrate using known signals applied to sensors.~~ |
| 27. | Containment Water Level Narrow Range (LT-599 & LT-600) | a. Check | M | a. | CHANNEL CHECK ~~Compare independent level readings.~~ |
| | | b. Calibrate | R | b. | CHANNEL CALIBRATION ~~Known signals applied to sensors.~~ |
| | Wide Range (LT-387 & LT-388) | a. Check | M | a. | CHANNEL CHECK ~~Observe normal reading and simulate full scale reading.~~ |
| | | b. Calibrate | R | b. | CHANNEL CALIBRATION ~~Known signals applied to sensors.~~ |
| 28. | Containment Wide Range Pressure Indication | a. Check | M | a. | CHANNEL CHECK ~~Compare independent pressure readings.~~ |
| | | b. Calibrate | R | b. | CHANNEL CALIBRATION ~~Apply known pressure to sensors.~~ |
| 29. | Toxic Gas Detectors: YIT-6288A&B ($Cl_2$) YIT-6286A&B (HCl, $H_2SO_4$) | a. Check | S | a. | Comparison of readings from redundant channels. |
| | | b. Calibrate | M | b. | Calibrate span/zero using calibration card. |
| | | c. Calibrate | R | c. | Calibrate span/zero adjustment with calibration card, and verify using gas standards. |

**TABLE 3-3** (Continued)

**MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING OF MISCELLANEOUS INSTRUMENTATION AND CONTROLS**

| | Channel Description | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|
| | YIS-6287A&B ($N_2H_4$,$NH_3$) | a. Check | S | a. | Comparison of readings from redundant channels. |
| | | b. Calibrate | Q | b. | Gas calibration. |
| 30. | Core Exit Thermo-couple | a. Check | M | a. | CHANNEL CHECK ~~Comparison of readings from redundant channels.~~ |
| | | b. Calibrate | R | b. | CHANNEL CALIBRATION ~~Calibration of A/D converters from known voltage sources.~~ |
| 31. | Heated Junction Thermocouple (YE-116A and YE-116B) | a. Check | M | a. | CHANNEL CHECK ~~Comparison readings from redundant channels.~~ |
| | | b. Calibrate | R | b. | CHANNEL CALIBRATION ~~Calibration of A/D converters from known voltage sources.~~ |

PM - Prior to scheduled cold leg cooldown below 300°F; monthly whenever temperature remains below 300°F and reactor vessel head is installed.



Amendment No. ~~87~~,~~107~~,~~110~~,~~122~~

## TABLE 3-3A

## MINIMUM FREQUENCY FOR CHECKS, CALIBRATIONS AND FUNCTIONAL TESTING OF ALTERNATE SHUTDOWN PANELS (AI-185 AND AI-212) AND EMERGENCY AUXILIARY FEEDWATER PANEL (AI-179) INSTRUMENTATION AND CONTROL CIRCUITS

| | Channel Description | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|
| 1. | WIDE RANGE LOGARITHMIC POWER AND SOURCE RANGE MONITORS (AI-212) | a. CHECK | M | a. | CHANNEL CHECK ~~COMPARE WIDE RANGE LOGARITHMIC POWER AND SOURCE RANGE INDICATIONS WITH CONTROL BOARD INDICATION.~~ |
| | | b. CALIBRATE | R | b. | CHANNEL CALIBRATION ~~CALIBRATE USING INTERNAL TEST CIRCUITS.~~ |
| 2. | REACTOR COOLANT COLD LEG TEMPERATURE (AI-185) | a. CHECK | M | a. | CHANNEL CHECK ~~COMPARE REACTOR COOLANT COLD LEG TEMPERATURE WITH CONTROL BOARD INDICATION.~~ |
| | | b. CALIBRATE | R | b. | CHANNEL CALIBRATION ~~ADJUST TO KNOWN CURRENT SOURCE.~~ |
| 3. | REACTOR COOLANT HOT LEG TEMPERATURE (AI-185) | a. CHECK | M | a. | CHANNEL CHECK ~~COMPARE REACTOR COOLANT HOT LEG TEMPERATURE WITH CONTROL BOARD INDICATION.~~ |
| | | b. CALIBRATE | R | b. | CHANNEL CALIBRATION ~~ADJUST TO KNOWN CURRENT SOURCE.~~ |
| 4. | PRESSURIZER LEVEL (AI-185) | a. CHECK | M | a. | CHANNEL CHECK ~~COMPARE PRESSURIZER LEVEL WITH CONTROL BOARD INDICATION.~~ |
| | | b. CALIBRATE | R | b. | CHANNEL CALIBRATION ~~KNOWN DIFFERENTIAL PRESSURE APPLIED TO SENSOR.~~ |
| 5. | VOLUME CONTROL TANK LEVEL (AI-185) | a. CHECK | M | a. | CHANNEL CHECK ~~COMPARE VOLUME CONTROL TANK LEVEL WITH CONTROL BOARD INDICATION.~~ |
| | | b. CALIBRATE | R | b. | CHANNEL CALIBRATION ~~KNOWN DIFFERENTIAL PRESSURE APPLIED TO SENSOR.~~ |
| 6. | ASP CONTROL CIRCUITS (AI-185) | a. TEST | R | a. | CHANNEL FUNCTIONAL TEST ~~VERIFY PROPER PUMP AND VALVE OPERATION AND INDICATION THROUGH MANUAL SWITCH OPERATION.~~ |

**TABLE 3-3A** (Continued)

**MINIMUM FREQUENCY FOR CHECKS, CALIBRATIONS AND FUNCTIONAL TESTING OF ALTERNATE SHUTDOWN PANELS (AI-185 AND AI-212) AND EMERGENCY AUXILIARY FEEDWATER PANEL (AI-179) INSTRUMENTATION AND CONTROL CIRCUITS**

| | Channel Description | Surveillance Function | Frequency | | Surveillance Method |
|---|---|---|---|---|---|
| 7. | STEAM GENERATOR LEVEL, WIDE RANGE (AI-179) | a. CHECK | M | a. | CHANNEL CHECK ~~COMPARE INDEPENDENT INDICATIONS.~~ |
| | | b. CALIBRATE | R | b. | CHANNEL CALIBRATION ~~KNOWN DIFFERENTIAL APPLIED TO SENSORS.~~ |
| 8. | STEAM GENERATOR LEVEL, NARROW RANGE (AI-179) | a. CHECK | M | a. | CHANNEL CHECK ~~COMPARE INDEPENDENT INDICATIONS.~~ |
| | | b. CALIBRATE | R | b. | CHANNEL CALIBRATION ~~KNOWN DIFFERENTIAL APPLIED TO SENSORS.~~ |
| 9. | STEAM GENERATOR PRESSURE (AI-179) | a. CHECK | M | a. | CHANNEL CHECK ~~COMPARE INDEPENDENT INDICATIONS.~~ |
| | | b. CALIBRATE | R | b. | CHANNEL CALIBRATION ~~KNOWN PRESSURE APPLIED TO SENSORS.~~ |
| 10. | PRESSURIZER PRESSURE (AI-179) | a. CHECK | M | a. | CHANNEL CHECK ~~COMPARE INDEPENDENT INDICATIONS.~~ |
| | | b. CALIBRATE | R | b. | CHANNEL CALIBRATION ~~KNOWN PRESSURE APPLIED TO SENSOR.~~ |
| 11. | EAFW CONTROL CIRCUITS (AI-179) | a. TEST | R | a. | CHANNEL FUNCTIONAL TEST ~~VERIFY PROPER VALVE OPERATION AND INDICATION THROUGH MANUAL SWITCH OPERATION.~~ |

**TABLE 3-5** (Continued)

| | | Test | Frequency | USAR Section Reference |
|---|---|---|---|---|
| 10c. | (continued) | 4. Automatic and/or manual initiation of the system shall be demonstrated. | R | |
| 11. | Containment Cooling and Iodine Removal Fusible Linked Dampers | 1. Demonstrate damper action.<br>2. Test a spare fusible link. | 1 year, 2 years, 5 years, and every 5 years thereafter. | 9.10 |
| 12. | Diesel Generator Under-Voltage Relays | Calibrate | R | 8.4.3 |
| 13. | Motor Operated Safety Injection Loop Valve Motor Starters (HCV-311, 314, 317, 320, 327, 329, 331, 333, 312, 315, 318, 321) | Verify the contactor pickup value at $\leq$85% of 460 V. | R | |
| 14. | Pressurizer Heaters | Verify control circuits operation for post-accident heater use. | R | |
| 15. | Spent Fuel Pool Racks | Test neutron poison ~~samples for~~ dimensional change, ~~hardness change,~~ weight, neutron attenuation ~~change~~ and specific gravity change. | 1, 2, 4, 7, and 10 years after installation, and every 5 years thereafter. | |
| 16. | Reactor Coolant Gas Vent System | 1. Verify all manual isolation valves in each vent path are in the open position. | During each refueling outage just prior to plant start-up. | |
| | | 2. Cycle each automatic valve in the vent path through at least one complete cycle of full travel from the control room. Verification of valve cycling may be determined by observation of position indicating lights. | R | |
| | | 3. Verify flow through the reactor coolant vent system vent paths. | R | |



Amendment No. ~~41,54,60,75,77,80,155,169~~

# ATTACHMENT B

## ION, JUSTIFICATION AND NO SIGNIFICANT HAZARDS CONSIDERATIONS

### SSION AND JUSTIFICATION:

na Public Power District (OPPD) proposes to revise Tables 3-1, 3-2, 3-3, and 3A of Fort Calhoun Station (FCS) Unit No. 1, Technical Specification (TS) 3.1, able 3-5 of TS 3.2, and the Table of Contents as follows:

1. Delete Table of Contents reference to In-Core Instrumentation and revise TS 2.11 to "DELETED" for consistency. Amendment 167 deleted TS 2.10.3, "In-Core Instrumentation." Amendment 169 inadvertently reinserted "In-Core Instrumentation" back into the Table of Contents.

2. Delete TS 2.1.7(1)b reference to monthly testing of the pressurizer level control circuit. This change is in addition to the change to TS 2.1.7(1)b submitted in OPPD's Application for Amendment dated September 6, 1995, which sought to remove only the word "month." The applicable Surveillance Test (TS 3.1, Table 3-3, Item 6) will no longer apply to pressurizer level instrumentation but will instead apply to the parameter pressurizer level (See Item 13 below). Furthermore, the monthly test to which TS 2.1.7(1)b currently refers is being changed to a CHANNEL CHECK as discussed in Item 13 below.

3. Add clarifying statements to the Basis of Specification 3.1. The additional statements 1) clarify expectations regarding a channel check of channels that are normally off scale during times when the surveillance is required, 2) note that the low temperature setpoint power operated relief valve (PORV) channel functional test (Table 3-3, Item 18.a) excludes PORV actuation, and 3) clarify that the power range safety channels daily calibration consists of heat balance adjustment only. These statements are based on similar information found in NUREG-1432, Combustion Engineering (CE) Standard Technical Specifications (STS).

4. Replace unnecessary text in the Surveillance Method column of Tables 3-1, 3-2, 3-3, and 3-3A with the defined terms, CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, or CHANNEL CALIBRATION. This change will simplify the tables by matching the Surveillance Function (e.g., "Check") with the appropriate definition (e.g., CHANNEL CHECK). Because of this change, a few items in the tables will require text to be moved to either the Channel Description or the Surveillance Function columns to adequately describe the surveillance. In addition, several items in the tables were reordered to a Check-Test-Calibrate sequence for consistency (e.g., Table 3-1, Items 3 & 4, etc.).

5. Change Table 3-1, Item 1.c, (quarterly surveillance of power range safety channels) from "Calibrate and Test" to "Test." Item 1.b requires the power range safety channels to be adjusted (calibrated) daily against a calorimetric balance standard to account for errors induced by changing rod patterns and core physics parameters. As stated in the Basis of Specification 3.1, "The minimum calibration frequencies of once-per-day for the power range safety channels, . . . are considered adequate." Item 1.c is meant to verify trip unit operability; thus, it is best described as a "Test."

**DISCUSSION, JUSTIFICATION AND NO SIGNIFICANT HAZARDS CONSIDERATIONS**

**DISCUSSION AND JUSTIFICATION:**

Omaha Public Power District (OPPD) proposes to revise Tables 3-1, 3-2, 3-3, and 3-3A of Fort Calhoun Station (FCS) Unit No. 1, Technical Specification (TS) 3.1, Table 3-5 of TS 3.2, and the Table of Contents as follows:

1. Delete Table of Contents reference to In-Core Instrumentation and revise TS 2.11 to "DELETED" for consistency. Amendment 167 deleted TS 2.10.3, "In-Core Instrumentation." Amendment 169 inadvertently reinserted "In-Core Instrumentation" back into the Table of Contents.

2. Delete TS 2.1.7(1)b reference to monthly testing of the pressurizer level control circuit. This change is in addition to the change to TS 2.1.7(1)b submitted in OPPD's Application for Amendment dated September 6, 1995, which sought to remove only the word "monthly." The applicable Surveillance Test (TS 3.1, Table 3-3, Item 6) will no longer apply to pressurizer level instrumentation but will instead apply to the parameter pressurizer level (See Item 13 below). Furthermore, the monthly test to which TS 2.1.7(1)b currently refers is being changed to a CHANNEL CHECK as discussed in Item 13 below.

3. Add clarifying statements to the Basis of Specification 3.1. The additional statements 1) clarify expectations regarding a channel check of channels that are normally off scale during times when the surveillance is required, 2) note that the low temperature setpoint power operated relief valve (PORV) channel functional test (Table 3-3, Item 18.a) excludes PORV actuation, and 3) clarify that the power range safety channels daily calibration consists of heat balance adjustment only. These statements are based on similar information found in NUREG-1432, Combustion Engineering (CE) Standard Technical Specifications (STS).

4. Replace unnecessary text in the Surveillance Method column of Tables 3-1, 3-2, 3-3, and 3-3A with the defined terms, CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, or CHANNEL CALIBRATION. This change will simplify the tables by matching the Surveillance Function (e.g., "Check") with the appropriate definition (e.g., CHANNEL CHECK). Because of this change, a few items in the tables will require text to be moved to either the Channel Description or the Surveillance Function columns to adequately describe the surveillance. In addition, several items in the tables were reordered to a Check-Test-Calibrate sequence for consistency (e.g., Table 3-1, Items 3 & 4, etc.).

5. Change Table 3-1, Item 1.c, (quarterly surveillance of power range safety channels) from "Calibrate and Test" to "Test." Item 1.b requires the power range safety channels to be adjusted (calibrated) daily against a calorimetric balance standard to account for errors induced by changing rod patterns and core physics parameters. As stated in the Basis of Specification 3.1, "The minimum calibration frequencies of once-per-day for the power range safety channels, . . . are considered adequate." Item 1.c is meant to verify trip unit operability; thus, it is best described as a "Test."

**DISCUSSION AND JUSTIFICATION (Continued):**

6. Remove Footnote No. 1 in Table 3-1, and reorder the remaining footnotes. Footnote No. 1 describes the operation of the bistable trip tester and is not needed to clarify any of the surveillance tests that reference it.

7. As stated above, Table 3-1, Item 4 (Thermal Margin/Low Pressure (TM/LP)) is being reordered into a Check-Test-Calibrate sequence. Using the defined term CHANNEL CALIBRATION in Item 4.c will allow OPPD to relax the current TM/LP calibration with negligible impact on safety. Calibration of the temperature input will still require a known resistance to be substituted for the resistance temperature detector (RTD) but will no longer require that this be done coincident with a known pressure input. Similarly, calibration of the pressure input will still require the application of a known pressure to the sensor but will not require that this be done coincident with the temperature calibration. The channel functional test that is part of a channel calibration will verify the proper trip function for the process input parameters.

8. Revise the Channel Description for Table 3-2, Items 3, 5, 21, and 23.d to refer to Engineered Safety Feature (ESF) "Actuation Logic." For consistency, the term "Initiation" is being replaced with "Actuation" in the Channel Description for Table 3-2, Items 7, 8, and 9 (testing ESF manual actuation).

9. Delete "Instruments" from the Channel Description of Table 3-2, Item 14 (safety injection tank (SIT) level and pressure instruments). This will make the Channel Description consistent with the Surveillance Method, i.e., "Verify that SIT level and pressure are within limits."

10. Insert a new Item 22 into Table 3-2 for testing manual actuation of the Off-site Power Low Signal (OPLS) channel and move the current Item 22 to Item 23. Testing manual actuation of the OPLS channel is currently accomplished during the refueling calibration of Item 21. Therefore, the intent of this change is to more clearly state the requirement for testing manual actuation of OPLS and not to change the test currently done.

11. Table 3-2, Item 23 (formerly Item 22) concerning the Auxiliary Feedwater Channel is being revised to a Check-Test-Calibrate Surveillance Frequency sequence for consistency with the other items in Table 3-2. Item 24 is being added to Table 3-2 for testing manual actuation of the Auxiliary Feedwater Channel. Testing manual actuation of the Auxiliary Feedwater Channel is currently accomplished under the existing Specification (Item 22.d.b). Therefore, the intent of this change is to more clearly state the requirement for testing manual actuation of the Auxiliary Feedwater Channel and not to change the test currently done.

12. Add Footnote No. 7 to Table 3-2 to clarify that the refueling frequency ESF channel functional test pertains to the backup channels such as derived circuits and equipment that cannot be tested when the plant is at power.

**DISCUSSION AND JUSTIFICATION (Continued):**

13. Revise the Channel Description of Table 3-3, Item 6, to "Pressurizer Level" and change the shiftly surveillance (Item 6.a) to "Verify that level is within limits." This change makes Item 6.a similar to CE STS Surveillance Requirement (SR) 3.4.9.1 (pressurizer water level). For consistency, Item 6 is being reordered into a Check-Test-Calibrate Surveillance Function sequence. Thus, the refueling calibration (currently Item 6.b) will switch places with Item 6.c. The monthly "Test" (currently Item 6.c) will be changed to "Check" and become Item 6.b. Following the change, Item 6.b will be similar to CE STS SR 3.3.11.1 (post accident monitoring instrumentation) and the monthly CHANNEL CHECK will supplement the shiftly level verification.

14. Upgrade Table 3-3, Items 21 (PORV Operation and Acoustic Position Indication) and 23 (Safety Valve Acoustic Position Indication) from a "Check" to a "Test." A channel functional test is the most appropriate means of verifying PORV operation & acoustic position indication and safety valve acoustic position indication. An oscillator and installed impactors are used to generate noise signals; thus, this surveillance is more accurately described as a channel functional test rather than a channel check.

15. Delete the requirement of Table 3-3, Items 21 (PORV Operation & Acoustic Position Indication), and 22 (PORV Block Valve Operation & Position Indication) to verify valve operability while powered from the emergency power supply. The PORVs and PORV Block Valves are powered from permanent Class 1E power supplies. Therefore, the requirement to verify operability of these valves while they are powered from the emergency power supply should be deleted as it provides no additional benefit. This revision is in accordance with the exception for plants with a permanent Class 1E power supply to these valves (CE STS, SR 3.4.11.4).

16. Delete the requirement of TS 3.2, Table 3-5, Item 15, to test spent fuel pool surveillance coupons for a change in hardness. This requirement related to monitoring of Boraflex® neutron absorber was inadvertently left in OPPD's Application for Amendment dated December 7, 1992, which proposed an increase in the FCS spent fuel pool storage capacity. The new high density storage racks contain Boral® as the neutron absorber. Boral® is a cermet composite material composed of type 1100 aluminum and boron compounds, which does not embrittle significantly when exposed to radiation. Thus, the requirement to test the Boral® surveillance coupons for hardness is unnecessary.

**BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATIONS:**

The proposed Technical Specification (TS) changes do not involve significant hazards considerations because operation of Fort Calhoun Station (FCS) Unit No. 1 in accordance with these changes would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The changes to the Table of Contents are administrative in nature to reflect the removal of incore instrumentation (Specification 2.10.3) from the TS by Amendment 167 and for consistency. Amendment 169 inadvertently reinserted incore instrumentation back into the Table of Contents.

The change to Specification 2.1.7(1)b is necessary because the requirement to test the signal to alarm meter relay located in Specification 3.1, Table 3-3, Item 6 is being deleted. The test, which verifies the high and low pressurizer level alarm settings and the pressurizer heater cutout function is unnecessary. Operating experience has shown that a shiftly pressurizer level verification as proposed for Specification 3.1, Table 3-3, Item 6.a is sufficient to detect any level deviation and verify that operation is within safety analyses assumptions. The level alarms serve as early warning devices but do not provide an accident mitigation function. Replacing the monthly test with a channel check is in accordance with NUREG-1432, Combustion Engineering (CE), Standard Technical Specifications (STS), Surveillance Requirement (SR) 3.3.11.1 (post accident monitoring instrumentation). The monthly channel check supplements the shiftly level verification.

The Basis of Specification 3.1 is revised to clarify expectations regarding a channel check of channels that are normally off scale when the surveillance is required. In this situation, the channel check only verifies that they are off scale in the same direction. Off scale low current loop channels are verified to be reading at the bottom of the range and not failed downscale. These statements are taken from the Bases of CE STS SR 3.3.4.1 Engineered Safety Features Actuation System (ESFAS) Instrumentation (Analog).

In addition, the Basis of Specification 3.1 is revised to clarify that power operated relief valve (PORV) actuation is not required during the channel functional test of the PORV low temperature setpoint (Table 3-3, Item 18.a). PORV actuation is not required because it could depressurize the reactor coolant system. This clarification is modeled after a similar statement from the Bases of SR 3.4.12.6 (Low Temperature Overpressure Protection (LTOP) System) of the CE STS.

Changing Specification 3.1, Tables 3-1, 3-2, 3-3, and 3-3A by using defined terms to enable the Surveillance Method to match the Surveillance Function is an administrative change designed to simplify the tables. Removal of the extraneous text does not alter the surveillance because the defined terms are equivalent in meaning to the deleted text.

**BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATIONS (Continued):**

The reordering of several items in the tables into a Check-Test-Calibrate sequence adds consistency to the tables. Text revisions in the Channel Description or Surveillance Function columns of Tables 3-1 and 3-2 add clarity and/or consistency. Footnote No. 1 in Table 3-1 concerning the bistable trip tester was deleted because it is unnecessary.

The Surveillance Function of Table 3-1, Item 1.c (Power Range Safety Channels) is being changed to "Test" from "Calibrate and Test." It is not necessary for Item 1.c to require both because Item 1.b already requires the power range safety channel adjustment (calibration) to be performed daily. As stated in the Basis of Specification 3.1, "The minimum calibration frequencies of once-per-day for the power range safety channels, . . . are considered adequate." To further clarify the issue, the Basis of Specification 3.1 is being revised to note that the daily calibration is a heat balance adjustment only.

Changing Table 3-1, Item 4 (Thermal Margin/Low Pressure (TM/LP)) to use the defined term CHANNEL CALIBRATION will allow OPPD to relax the current TM/LP calibration requirements with a negligible impact on safety. Calibration of the temperature input and pressure input will still require calibration to known standards (i.e., resistance and pressure), but will allow the calibrations to be done separately instead of coincidently. The channel functional test that follows the channel calibration verifies proper function of the TM/LP circuitry.

Removing the word "Instruments" from the Channel Description of Table 3-2, Item 14 makes the Channel Description consistent with the Surveillance Method. Table 3-2, Item 14 is not intended to verify safety injection tank (SIT) instrumentation operability but rather that the parameters level and pressure are within limits. Generic Letter (GL) 93-05, Item 7.4, states that the operability of SIT instrumentation is not directly related to the capability of a SIT to perform its safety function. GL 93-05 concludes that the surveillance should only confirm that the parameters defining SIT operability are within their specified limits.

Items 22 & 24 are being added to Table 3-2 to clearly state the requirement for testing manual actuation of the Engineered Safety Features (ESF) channels for Off-site Power Low Signal (OPLS) and Auxiliary Feedwater. Although testing manual actuation of these channels is done via the existing Specifications, the requirement to do so is not clearly stated. Reordering Table 3-2, Item 23 into a Check-Test-Calibrate Surveillance Frequency sequence adds clarity and consistency.

The addition of Footnote No. 7 to Table 3-2 clarifies that the refueling frequency ESF channel functional test pertains to the backup channels such as derived circuits and equipment that cannot be tested when the plant is at power. Operating certain relays during power operation could cause plant transients or equipment damage.

**BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATIONS (Continued):**

The revisions to Table 3-3, Item 6, clarify that pressurizer level is the parameter to be verified and not the pressurizer level instruments. The revision to Item 6.a is consistent with CE STS SR 3.4.9.1 (pressurizer water level). Reordering Item 6 into a Check-Test-Calibrate Surveillance Function sequence makes Item 6 consistent with the ordering of the other items in Table 3-3. The requirement to test the signal to alarm meter relay currently located in Specification 3.1, Table 3-3, Item 6.c is unnecessary. Operating experience has shown that a shiftly pressurizer level verification as proposed for Specification 3.1, Table 3-3, Item 6.a is sufficient to detect any level deviation and verify that operation is within safety analyses assumptions. Thus, the monthly "Test" requirement will be replaced with a "Check" to supplement the less formal but more frequent shiftly level verification of Item 6.a.

Table 3-3, Items 21 (PORV Operation & Acoustic Position Indication Channel) and 23 (Safety Valve Acoustic Position Indication Channel) should be revised to a channel functional test from a channel/circuit check. An oscillator and installed impactors are used to generate noise signals and therefore, this surveillance is more accurately described as a channel functional test rather than a channel check.

Table 3-3, Items 21 and 22 (PORV Block Valve Operation & Position Indication) should have the requirement to verify operation on the emergency power supply deleted. Permanent Class 1E power supplies the PORV and PORV Block Valve. Therefore, verification of PORV or PORV Block Valve operability while powered from the emergency power supply system provides no additional benefit. (Operability of the emergency power supply system is tested in accordance with Specification 3.7.) The proposed revision is in accordance with the exception for plants with a permanent Class 1E power supply to these valves as stated in CE STS, SR 3.4.11.4.

Deletion of the requirement of TS 3.2, Table 3-5, Item 15, to test spent fuel pool surveillance coupons for a change in hardness corrects an oversight in the Application for Amendment dated December 7, 1992.

As stated in the Safety Evaluation Report enclosed with Amendment 155, "Each coupon, upon its removal from the mounting jacket, will be analyzed according to the following tests:

- visual observation and photography
- neutron attenuation
- dimensional measurements (length, width, and thickness)
- weight and specific gravity."

The tests listed above are sufficient to detect degradation of the Boral® material and do not require that the surveillance coupons be tested for hardness.

**BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATIONS (Continued):**

Based on the above discussion, the proposed changes clarify and standardize existing surveillance requirements, remove redundant requirements, correct minor oversights from previous amendment requests or are in accordance with CE STS. Thus, none of the requested changes involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed revisions will not result in any physical alterations to the plant configuration, changes to setpoint values, or changes to the application of setpoints or limits. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) Involve a significant reduction in a margin of safety.

The proposed changes clarify existing surveillance requirements, remove redundant requirements, correct minor oversights from previous amendment requests or are in accordance with CE STS. Thus, none of the requested changes involves a significant reduction in a margin of safety.

Based on the above considerations, it is OPPD's position that this proposed amendment does not involve significant hazards considerations as defined by 10 CFR 50.92. The proposed changes will not result in a condition that significantly alters the impact of the Station on the environment. Thus, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), and pursuant to 10 CFR 51.22(b) no environmental assessment need be prepared.