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PSEG
Nuclear LLC

APR 1 1 2003

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS
PRESSURE SENSOR RESPONSE TIME TESTING
SALEM GENERATING STATION
FACILITY OPERATING LICENSE NOS. DPR-70 AND DPR-75
DOCKET NOS. 50-272 AND 50-311

Pursuant to 10 CFR 50.90, PSEG Nuclear LLC (PSEG) hereby requests a revision to the Technical Specifications for the Salem Generating Station. In accordance with 10CFR50.91(b)(1), a copy of this submittal has been sent to the State of New Jersey.

The proposed amendment will modify Surveillance Requirements 4.3.1.1.3, 4.3.2.1.3 and Bases Sections B3/4.3.1 and B3/4.3.2 concerning response time testing of the ESF Actuation System (ESFAS) and the Reactor Trip System (RTS). These changes are in conformance with the changes approved in WCAP-13632-P-A, Revision 2. WCAP-13632, Revision 2 was developed by Westinghouse and approved by the NRC in September 1995. Additionally, the footnote associated with Unit 1 Surveillance Requirement 4.3.2.1.3 regarding a one-time extension to the Surveillance Requirement is being deleted.

PSEG has evaluated the proposed changes in accordance with 10CFR50.91(a)(1), using the criteria in 10CFR50.92(c), and has determined this request involves no significant hazards considerations. The proposed amendment also meets the eligibility criteria for categorical exclusion set forth in 10CFR51.22(c)(9). An evaluation of the requested changes is provided in Attachment 1 to this letter. The marked up Technical Specification pages affected by the proposed changes are provided in Attachment 2.

The proposed changes are similar to changes approved for the Virgil C. Summer Nuclear Station Unit 1 (Amendment No. 146, TAC No. MA8632) on August 29, 2000, and Millstone Nuclear Power Station Unit 3 (Amendment No. 187, TAC No. MA9360) on November 3, 2000.

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PSEG requests approval of the proposed License Amendment by September 30, 2003 to be implemented within 60 days.

Should you have any questions regarding this request, please contact Mr. Brian Thomas at 856-339-2022.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on APR 1 1 2003

Sincerely,

Timothy O'Connor
Vice President – Operations

Attachments (2)

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SALEM GENERATING STATION
UNITS 1 AND 2
FACILITY OPERATING LICENSE DPR-70 AND DPR-75
DOCKET NOS. 50-272 AND 50-311

EVALUATION OF REVISIONS TO THE TECHNICAL SPECIFICATIONS FOR PRESSURE SENSOR RESPONSE TIME TESTING

REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS PRESSURE SENSOR RESPONSE TIME TESTING

Table of Contents

REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS PRESSURE SENSOR RESPONSE TIME TESTING

1. DESCRIPTION

The proposed amendment would revise the Salem Technical Specifications (TS) contained in Appendix A of the Operating License to modify Surveillance Requirements 4.3.1.1.3, 4.3.2.1.3 and Bases Sections B3/4.3.1 and B3/4.3.2 concerning response time testing of the ESF Actuation System (ESFAS) and the Reactor Trip System (RTS). Additionally, the footnote associated with Unit 1 Surveillance Requirement 4.3.2.1.3 regarding a one-time extension to the Surveillance Requirement is being deleted.

2. PROPOSED CHANGE

Surveillance Requirements (SR) 4.3.1.1.3 and 4.3.2.1.3 are being revised to incorporate the philosophy approved in WCAP-13632-P-A, Revision 2. This change replaces the words "demonstrated" and "tested" with the words "verified" and "verification". The associated Bases Sections B3/4.3.1 and B3/4.3.2 are being revised to reflect these changes.

The footnote associated with Unit 1 Surveillance Requirement 4.3.2.1.3 regarding a one-time extension of the Surveillance Requirement until the Unit 1 thirteenth refueling outage (1R13) is being removed. This change is administrative.

The proposed TS changes are reflected in the marked-up pages contained in Attachment 2.

3. BACKGROUND

Instrument response time is, generally, the time span from when a monitored variable exceeds a predetermined setpoint, at the channel sensor, until the actuated device is capable of performing its safety function. Response time testing (RTT) has been an integral part of the Technical Specifications (TS) surveillance program to assure the proper functioning of the sensors and instrumentation loops for the ESFAS and RTS. The verification of response time at the specified frequencies provides assurance that the RTS and ESFAS associated with each credited channel meets the response time performance requirements assumed in the plant safety analysis. Response time may be verified by actual response time tests in any series of sequential, overlapping or total channel measurements provided that such tests demonstrate the total channel response time.

The Westinghouse Owners Group (WOG) performed an analysis to assess the impact of elimination of RTT for pressure sensor instruments. This analysis also

discussed alternate test methodology that would show that the instrument was functioning properly. The WOG licensing Topical Report WCAP-13632-P-A, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," was approved by the NRC on September 5, 1995. The safety evaluation approving this document stipulated certain conditions that a licensee must meet when implementing the guidelines presented in this document.

The footnote to Unit 1 Surveillance Requirement 4.3.2.1.3 was added by Amendment 222 to allow the surveillance interval to be extended until completion of the Unit 1 thirteenth refueling outage (1R13). 1R13 was completed in the Fall of 1999 and therefore this footnote is no longer necessary. This change is considered an administrative change.

4. TECHNICAL ANALYSIS

WCAP-13632-P-A, Revision 2 contains the technical basis and methodology for eliminating RTT requirements on selected pressure sensing instruments. This WCAP was approved by the NRC on September 5, 1995 (reference 2). The NRC Safety evaluation stipulates that when submitting a plant-specific license amendment request, the licensee must confirm the applicability of the generic analysis to their plant and must commit to the following actions:

a) Perform a hydraulic RTT prior to installation of a new transmitter/switch or following refurbishment of the transmitter/switch (e.g., sensor cell or variable damping components) to determine an initial sensor-specific response time value.

b) For transmitters and switches that use capillary tubes, perform a RTT after initial installation and after any maintenance or modification activity that could damage the capillary tubes.

c) If variable dampening is used, implement a method to assure that the potentiometer is at the required setting and cannot be inadvertently changed or perform hydraulic RTT of the sensor following each calibration.

d) Perform periodic drift monitoring of the all Model 1151, 1152, 1153 and 1154 Rosemount pressure and differential pressure transmitters, for which RTT elimination is proposed, in accordance with the guidance contained in Rosemount Technical Bulletin No. 4 and continue to remain in full compliance with any prior commitments to Bulletin 90-01, Supplement 1. As an alternative to performing periodic drift monitoring of Rosemount transmitters, licensees may complete the following actions: (1) ensure that operators and technicians are aware of the Rosemount transmitter loss of fill-oil issue and make provisions to ensure that technicians monitor for sensor response time degradation during the performance of calibrations

and functional tests of these transmitters, and (2) review and revise surveillance testing procedures, if necessary, to ensure that calibrations are being performed using equipment designed to provide a step function or fast ramp in the process variable and that calibrations and functional tests are being performed in a manner that allows simultaneous monitoring of both the input and output response of the transmitter under test, thus allowing, with reasonable assurance, the recognition of significant response time degradation.

Salem Units 1 and 2 utilize the following pressure and differential pressure transmitters for sensing pressure in the RTS and ESFAS instrumentation loops.

Function	Transmitter Type
Steam Generator Water Level	Rosemount 1154
Pressurizer Pressure	Rosemount 1154
Steamline Pressure	Rosemount 1154
Steamline Flow	Rosemount 1154
Containment Pressure	Rosemount 1153
Reactor Coolant Flow	Rosemount 1154

These sensors are bounded by the generic analysis contained in WCAP-13632-P-A, Revision 2, however, an allocated response time for these instruments is not provided in Table 9-1 of the WCAP. As directed in the WCAP, baseline response time values for these transmitters will be determined by evaluating data obtained from previous plant response time testing or if the transmitter is replaced, the response time obtained through testing.

As part of the implementation of the approved license amendment PSEG will satisfy the NRC required actions as follows:

a) Consistent with the proposed change to SR 4.3.1.1.3 and SR 4.3.2.1.3 and EPRI Report NP-7243, Revision 1, "Investigation of Response Time Testing Requirements," the applicable plant procedures will include requirements that pressure sensor response times be verified by performance of an appropriate response time test prior to installation of a new sensor and re-verified following maintenance that may adversely affect sensor response time.

b) For those sensors that utilize capillary tubing, the applicable plant procedures will include requirements to perform a RTT after initial installation and after any maintenance or modification that could damage the capillary tubes.

c) For pressure or differential pressure sensors with variable dampening, plant procedures and/or other administrative controls will be revised and/or developed to assure the variable damping potentiometer can not be inadvertently changed or RTT testing will be performed following each calibration.

d) PSEG responded to NRC Bulletins 90-01 and 90-01, Supplement 1, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount," by submittals dated July 18, 1990, March 5, 1993, and April 27, 1994. These submittals address the actions taken by Salem with respect to loss of fill-oil for the Rosemount transmitters. Salem is currently in the process of developing a commitment change to eliminate the Bulletin 90-01 drift monitoring. As a result, Salem will implement the alternative actions identified in the NRC's SER dated September 8, 1995. Action (1) to ensure that operators and technicians are aware of the Rosemount transmitter loss of fill-oil issue and make provisions to ensure that technicians monitor for sensor response time degradation is currently being implemented as documented in our March 5, 1993 response to Bulletin 90-01, Supplement 1. As stated in the March 5, 1993 response, calibration of the transmitters includes observation of the transmitter for sluggish response and during channel checks performed by the operating staff deviations from channel to channel are noted and investigated. To meet action (2) of the alternative approach, surveillance testing procedures will be reviewed and/or revised as necessary to ensure that calibrations are being performed using equipment designed to provide a step function or fast ramp in the process variable and that calibrations and functional tests are being performed in a manner that allows simultaneous monitoring of both the input and output response of the transmitter under test, thus allowing, with reasonable assurance, the recognition of significant response time degradation.

The proposed changes are similar to changes approved for the Virgil C. Summer Nuclear Station Unit 1 (Amendment No. 146, TAC Nos. MA8632) on August 29, 2000, and Millstone Nuclear Power Station Unit 3 (Amendment No. 187, TAC No. MA9360) on November 3, 2000.

5. REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

PSEG Nuclear LLC (PSEG) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment" as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   This change to the Technical Specifications does not result in a condition where the design, material, and construction standards that were applicable prior to the change are altered. The same RTS and ESFAS

instrumentation is being used; the time response allocations/modeling assumptions in the Chapter 15 analyses are still the same; only the method of verifying time response is changed. The proposed change will not modify any system interface and could not increase the likelihood of an accident since these events are independent of this change. The proposed activity will not change, degrade or prevent actions or alter any assumptions previously made in evaluating the radiological consequences of an accident described in the SAR. Therefore, the proposed amendment does not result in any increase in the probability or consequences of an accident previously evaluated.

The proposed change to remove the footnote from Unit 1 Surveillance Requirement 4.3.2.1.3 is an administrative change and does not result in any increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

This change does not alter the performance of the pressure and differential pressure transmitters and switches used in the plant protection systems. All sensors will still have response time verified by test before placing the sensor in operational service and after any maintenance that could affect response time. Changing the method of periodically verifying instrument response for certain sensors (assuring equipment operability) from time response testing to calibration and channel checks will not create any new accident initiators or scenarios. Periodic surveillance of these instruments will detect significant degradation in the sensor response characteristic. Implementation of the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change to remove the footnote from Unit 1 Surveillance Requirement 4.3.2.1.3 is an administrative change and does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

This change does not affect the total system response time assumed in the safety analysis. The periodic system response time verification

method for selected pressure and differential pressure sensors is modified to allow use of actual test data or engineering data. The method of verification still provides assurance that the total system response is within that defined in the safety analysis, since calibration tests will detect any degradation which might significantly affect sensor response time. Based on the above, it is concluded that the proposed license amendment does not result in a reduction in margin with respect to plant safety.

The proposed change to remove the footnote from Unit 1 Surveillance Requirement 4.3.2.1.3 is an administrative change and does not involve a reduction in a margin of safety.

Based on the above, PSEG concludes that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

The changes proposed in this submittal are consistent with the guidance provided in WCAP-13632-P-A, Revision 2.

In conclusion, based on the considerations discussed above, (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.

6. ENVIRONMENTAL CONSIDERATION

PSEG has determined the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or a surveillance requirement. The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

7. REFERENCES

1. WCAP-13632, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," August 1995.

2. B. A. Boger (USNRC) letter to R. A. Newton (Westinghouse Owners Group), "Review of Westinghouse Electric Corporation Topical Report WCAP-13632, Revision 2 – Elimination of Pressure Sensor Response Time Testing Requirements, " dated September 5, 1995.

3. Virgil C. Summer Nuclear Station Unit 1 Amendment No. 146, TAC No. MA8632, dated August 29, 2000.

4. Millstone Nuclear Power Station Unit 3 Amendment No. 187, TAC No. MA9360, dated November 3, 2000.

SALEM GENERATING STATION
FACILITY OPERATING LICENSE DPR-70 & DPR-75
DOCKET NO. 50-272 & 50-311
REVISION TO THE TECHNICAL SPECIFICATIONS
PRESSURE SENSOR RESPONSE TIME TESTING

TECHNICAL SPECIFICATION PAGES WITH PROPOSED CHANGES

The following Technical Specifications for Facility Operating License No. DPR-70 are affected by this change request:

Technical Specification	Page
3/4.3.3.1.1	3/4 3-1
3/4.3.3.2.1	3/4 3-14
B3/4.3.1 and B3/4.3.2	B 3/4 3-1a

The following Technical Specifications for Facility Operating License No. DPR-75 are affected by this change request:

Technical Specification	Page
3/4.3.3.1.1	3/4 3-1
3/4.3.3.2.1	3/4 3-14
B3/4.3.1 and B3/4.3.2	B 3/4 3-1a

INSERT A

The verification of response time at the specified frequencies provides assurance that the reactor trip and the engineered safety features actuation associated with each channel is completed within the time limit assumed in the safety analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable. Response time may be verified by actual tests in any series of sequential, overlapping or total channel measurements, or by summation of allocated sensor response times with actual tests on the remainder of the channel in any series of sequential or overlapping measurements. Allocations for sensor response times may be obtained from: (1) historical records based on acceptable response time tests (hydraulic, noise, or power interrupt tests), (2) inplace, onsite, or offsite (e.g. vendor) test measurements, or (3) utilizing vendor engineering specifications. WCAP-13632, Revision 1, "Elimination of Pressure Sensor Response Time Testing Requirements' provides the basis and methodology for using allocated sensor response times in the overall verification of the Technical Specifications channel response time. The allocations for sensor response times must be verified prior to placing the sensor in operational service and re-verified following maintenance that may adversely affect response time. In general, electrical repair work does not impact response time provided the parts used for repair are of the same type and value. One example where time response could be affected is replacing the sensing assembly of a transmitter.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Table 3.3-2.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1.1 Each reactor trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the MODES and at the frequencies shown in Table 4.3-1.

4.3.1.1.2 The logic for the interlocks shall be demonstrated OPERABLE prior to each reactor startup unless performed during the preceding 92 days. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.

4.3.1.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be ~~demonstrated~~ **verified** to be within its limit at least once per 18 months. Each ~~test~~ **verification** shall include at least one logic train such that both logic trains are ~~tested~~ **verified** at least once per 36 months and one channel per function such that all channels are ~~tested~~ **verified** at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.1 The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Table 3.3-5.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-3 until the channel is restored to OPERABLE status with the trip setpoint adjusted consistent with the Trip Setpoint value.

b. With an ESFAS instrumentation channel inoperable, take the ACTION shown in Table 3.3-3.

SURVEILLANCE REQUIREMENTS

4.3.2.1.1 Each ESFAS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the MODES and at the frequencies shown in Table 4.3-2.

4.3.2.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the automatic actuation logic test. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.

4.3.2.1.3* The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be ~~demonstrated~~ **verified** to be within the limit at least once per 18 months. Each ~~test~~ **verification** shall include at least one logic train such that both logic trains are ~~tested~~ **verified** at least once per 36 months and one channel per function such that all channels are ~~tested~~ **verified** at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" Column of Table 3.3-3. The provisions of Specification 4.0.4 are not applicable to MSIV closure time testing. The provisions of Specification 4.0.4 are not applicable to the turbine driven auxiliary feedwater pump provided the surveillance is performed within 24 hours after the secondary steam generator pressure is greater than 680 psig.

~~* A one time extension to this surveillance requirement for performance of relay time response and sequence testing of the safeguard equipment control (SEC) system, which partially satisfies the surveillance requirement, is granted during fuel cycle thirteen allowing Unit 1 operations to continue to the thirteenth refueling outage (1R13). The surveillance testing is to be completed at the appropriate time during the 1R13 outage, prior to the unit returning to Mode 4 upon outage completion.~~

field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," and Supplements to that report. Surveillance intervals and out of service times were determined based on maintaining an appropriate level of reliability of the Reactor Protection System and Engineered Safety Features instrumentation.

~~The measurement of response time at the specified frequencies provides assurance that the protective and ESF action function associated with each channel is completed within the time limit assumed in the accident analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable.~~

~~Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either 1) in place, onsite or offsite test measurements or 2) utilizing replacement sensors with certified response times.~~

INSERT A

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that 1) the radiation levels are continually measured in the areas served by the individual channels and 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded.

The isolation alarm/trip setpoint for the Containment Purge and Pressure Relief system during MODE 6 is established to ensure that in the event of a fuel handling accident inside containment, prompt isolation will occur to ensure calculated offsite doses remain below 10CFR100 limits. Prompt isolation will also ensure that Control Room doses following a fuel handing accident will remain below GDC-19 limits. The alarm/trip setpoint value of Table 3.3-6 for the R12A while in Mode 6 will be established based upon isolating the Containment Purge and Pressure Relief System when containment gaseous activity levels reach 50% of the more conservative 10CFR20 concentration limits for release to unrestricted areas. These concentration limits are specified in 10CFR20, Appendix B, Table II, Column 1. A setpoint based on 50% of the 10CFR20 concentration limits will be low enough to ensure that prompt Containment Purge and Pressure Relief system isolation occurs during a fuel handling accident and high enough to prevent unnecessary Containment Purge and Pressure Relief system isolations caused by routine outage activities.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Table 3.3-2.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1.1 Each reactor trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-1.

4.3.1.1.2 The logic for the interlocks shall be demonstrated OPERABLE prior to each reactor startup unless performed during the preceding 92 days. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.

4.3.1.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be ~~demonstrated~~ **verified** to be within its limit at least once per 18 months. Each ~~test~~ **verification** shall include at least one logic train such that both logic trains are ~~tested~~ **verified** at least once per 36 months and one channel per function such that all channels are ~~tested~~ **verified** at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.1 The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Table 3.3-5.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-3 until the channel is restored to OPERABLE status with the trip setpoint adjusted consistent with the Trip Setpoint value.

b. With an ESFAS instrumentation channel inoperable, take the ACTION shown in Table 3.3-3.

SURVEILLANCE REQUIREMENTS

4.3.2.1.1 Each ESFAS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at frequencies shown in Table 4.3-2.

4.3.2.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the automatic actuation logic test. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.

4.3.2.1.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be ~~demonstrated~~ **verified** to be within the limit at least once per 18 months. Each ~~test~~ **verification** shall include at least one logic train such that both logic trains are ~~tested~~ **verified** at least once per 36 months and one channel per function such that all channels are ~~tested~~ **verified** at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" Column of Table 3.3-3. The provisions of Specification 4.0.4 are not applicable to MSIV closure time testing. The provisions of Specification 4.0.4 are not applicable to the turbine driven auxiliary feedwater pump provided the surveillance is performed within 24 hours after the secondary steam generator pressure is greater than 680 psig.

these uncertainties are factored into the determination of each Trip Setpoint. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," and Supplements to that report. Surveillance intervals and out of service times were determined based on maintaining an appropriate level of reliability of the Reactor Protection System and Engineered Safety Features instrumentation.

~~The measurement of response time at the specified frequencies provides assurance that the protective and ESF action function associated with each channel is completed within the time limit assumed in the accident analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable.~~

~~Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either 1) in place, onsite or offsite test measurements or 2) utilizing replacement sensors with certified response times.~~

INSERT A

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that 1) the radiation levels are continually measured in the areas served by the individual channels and 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded.

The isolation alarm/trip setpoint for the Containment Purge and Pressure Relief system during MODE 6 is established to ensure that in the event of a fuel handling accident inside containment, prompt isolation will occur to ensure calculated offsite doses remain below 10CFR100 limits. Prompt isolation will also ensure that Control Room doses following a fuel handing accident will remain below GDC-19 limits. The alarm/trip setpoint value of Table 3.3-6 for the R12A while in Mode 6 will be established based upon isolating the Containment Purge and Pressure Relief System when containment gaseous activity levels reach 50% of the more conservative 10CFR20 concentration limits for release to unrestricted areas. These concentration limits are specified in 10CFR20, Appendix B, Table II, Column 1. A setpoint based on 50% of the 10CFR20 concentration limits will be low enough to ensure that prompt Containment Purge and Pressure Relief system isolation occurs during a fuel handling accident and high enough to prevent unnecessary Containment Purge and Pressure Relief system isolations caused by routine outage activities.