

FNP Unit 1

Technical Specifications

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3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1

SURVEILLANCE REQUIREMENTS

4.3.1.1 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.

4.3.1.2 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.

4.3.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested 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.

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* Neutron detectors are exempt from response time testing.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 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.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.3.2.1 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 the frequencies shown in Table 4.3-2.

4.3.2.2 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.

4.3.2.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested 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.

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1/4.1 INSTRUMENTATION

BASES

REACTOR TRIP SYSTEM AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM
INSTRUMENTATION (Continued)

Verification
The ~~measurement~~ of response time at the specified frequencies provides assurance that the reactor trip and ESF actuation associated with each channel is completed within the time limit assumed in the accident analyses. Response time limits for the Reactor Trip System and Engineered Safety Features Actuation System are maintained in Tables 7.2-5 and 7.3-16 of the Farley PSAR respectively. No credit was taken in the analyses for those channels with response times indicated as not applicable.

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~~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.~~

1/4.1.1 MONITORING INSTRUMENTATION

1/4.1.1.1 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.

Alarm/trip setpoints for the containment purge have been established for purge rate of 5,000 scfm in all MODES and for purge rates of 25,000 scfm and 50,000 scfm in MODES 4, 5, and 6. The containment purge setpoints are based on a release in which Xe-133 and Kr-85 are the predominant isotopes, on concentration values equal to or less than the effluent concentration limits stated in 10 CFR 20, Appendix B (to paragraphs 20.1001 - 20.2401), Table 2, Column 1 for these isotopes, and on a X/Q of 5.6×10^{-6} sec/m at the site boundary.

The alarm/trip setpoint for the fuel storage pool area has been established based on a flow rate of 13,000 scfm; a release in which Xe-133 and Kr-85 are the predominant isotopes, on concentration values equal to or less than the effluent concentration limits stated in 10 CFR 20, Appendix B (to paragraphs 20.1001 - 20.2401), Table 2, Column 1 values for these isotopes, and on a X/Q of 5.6×10^{-6} sec/m at the site boundary.

1/4.1.1.2 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core. The OPERABILITY of this system is demonstrated by irradiating each detector used and determining the acceptability of its voltage curve.

For the purpose of measuring $F_Q(2)$, F_{AH} , and F_{xy} a full incore flux map is used. Quarter-core flux maps, as defined in WCAP-8648, June 1976, may be used in recalibration of the excore neutron flux detection system. Full incore flux maps or symmetric incore thimbles may be used for monitoring the QUADRANT POWER TILT RATIO when one Power Range Channel is inoperable.

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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 specific pressure and differential pressure sensor response times may be obtained from: (1) historical records based on acceptable response time tests (hydraulic, noise, or power interrupt tests), (2) in place, 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 channel response time for specific sensors identified in the WCAP. The allocations for these 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. Response time verification for other sensor types must be demonstrated by test.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1 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.

4.3.1.2 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.

4.3.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be verified to be within its limit at least once per 18 months.* Each verification shall include at least one logic train such that both logic trains are verified at least once per 36 months and one channel per function such that all channels are 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.

* Neutron detectors are exempt from response time testing.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 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.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.3.2.1 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 the frequencies shown in Table 4.3-2.

4.3.2.2 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.

4.3.2.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be verified to be within the limit at least once per 18 months. Each verification shall include at least one logic train such that both logic trains are verified at least once per 36 months and one channel per function such that all channels are 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.

INSTRUMENTATION

BASES

REACTOR TRIP SYSTEM AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION (Continued)

The verification of response time at the specified frequencies provides assurance that the reactor trip and ESP actuation associated with each channel is completed within the time limit assumed in the accident analyses. Response time limits for the Reactor Trip System and Engineered Safety Features Actuation System are maintained in Tables 7.2-5 and 7.3-16 of the Farley FSAR, respectively. 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 specific pressure and differential pressure sensor response times may be obtained from: (1) historical records based on acceptable response time tests (hydraulic, noise, or power interrupt tests), (2) in place, 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 channel response time for specific sensors identified in the WCAP. The allocations for these 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. Response time verification for other sensor types must be demonstrated by test.

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.

Alarm/trip setpoints for the containment purge have been established for a purge rate of 5,000 scfm in all MODES and for purge rates of 25,000 scfm and 50,000 scfm in MODES 4, 5, and 6. The containment purge setpoints are based on a release in which Xe-133 and Kr-85 are the predominant isotopes, on concentration values equal to or less than the effluent concentration limits stated in 10 CFR 20, Appendix B (to paragraphs 20.1001₁ - 20.2401), Table 2, Column 1 for these isotopes, and on a X/Q of 5.6×10^{-6} sec/m³ at the site boundary.

INSTRUMENTATION

BASES

RADIATION MONITORING INSTRUMENTATION (Continued)

The alarm/trip setpoint for the fuel storage pool area has been established based on a flow rate of 13,000 scfm; a release in which Xe-133 and Kr-85 are the predominant isotopes, on concentration values equal to or less than the effluent concentration limits stated in 10 CFR 20, Appendix B (to paragraphs 20.1001 - 20.2401), Table 2, Column 1 for these isotopes, and on a X/Q of 5.6×10^{-6} sec/m³ at the site boundary.

3/4.3.3.2 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core. The OPERABILITY of this system is demonstrated by irradiating each detector used and determining the acceptability of its voltage curve.

For the purpose of measuring $F_Q(Z)$, F_{AH}^N , and F_{xy} a full incore flux map is used. Quarter-core flux maps, as defined in WCAP-8648, June 1976, may be used in recalibration of the excore neutron flux detection system. Full incore flux maps or symmetric incore thimbles may be used for monitoring the QUADRANT POWER TILT RATIO when one Power Range Channel is inoperable.

FNP Unit 2

Technical Specifications

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3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1

SURVEILLANCE REQUIREMENTS

4.3.1.1 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.

4.3.1.2 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.

4.3.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested 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.

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* Neutron detectors are exempt from response time testing.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 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.

APPLICABILITY: As shown in Table 3.3-3

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.3.2.1 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 the frequencies shown in Table 4.3-2.

4.3.2.2 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.

4.3.2.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested 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.

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1/4.1 INSTRUMENTATION

BASES

REACTOR TRIP SYSTEM AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM
INSTRUMENTATION (Continued)

The ^{verification} ~~assessment~~ of response time at the specified frequencies provides assurance that the reactor trip and ESF actuation associated with each channel is completed within the time limit assumed in the accident analyses. Response time limits for the Reactor Trip System and Engineered Safety Features Actuation System are maintained in Tables 7.2-5 and 7.3-16 of the Farley PSAB, respectively. No credit was taken in the analyses for those channels with response times indicated as not applicable.

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~~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.~~

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1/4.1.1 MONITORING INSTRUMENTATION

1/4.1.1.1 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.

Alarm/trip setpoints for the containment purge have been established for purge rate of 5,000 scfm in all MODES and for purge rates of 25,000 scfm and 50,000 scfm in MODES 4, 5, and 6. The containment purge setpoints are based on a release in which Xe-133 and Kr-85 are the predominant isotopes, on concentration values equal to or less than the effluent concentration limits stated in 10 CFR 20, Appendix B (to paragraphs 20.1001 - 20.2401), Table 2, Column 1 for these isotopes, and on a X/Q of 5.6×10^{-6} sec/m at the site boundary.

The alarm/trip setpoint for the fuel storage pool area has been established based on a flow rate of 13,000 scfm; a release in which Xe-133 and Kr-85 are the predominant isotopes, on concentration values equal to or less than the effluent concentration limits stated in 10 CFR 20, Appendix B (to paragraphs 20.1001 - 20.2401), Table 2, Column 1 values for these isotopes, and on a X/Q of 5.6×10^{-6} sec/m at the site boundary.

1/4.1.1.2 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core. The OPERABILITY of this system is demonstrated by irradiating each detector used and determining the acceptability of its voltage curve.

For the purpose of measuring $F_Q(z)$, F_{AM} , and F_{xy} a full incore flux map is used. Quarter-core flux maps, as defined in NCAEP-8648, June 1976, may be used in recalibration of the excore neutron flux detection system. Full incore flux maps or symmetric incore thimbles may be used for monitoring the QUADRANT POWER TILT RATIO when one Power Range Channel is inoperable.

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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 specific pressure and differential pressure sensor response times may be obtained from: (1) historical records based on acceptable response time tests (hydraulic, noise, or power interrupt tests), (2) in place, 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 channel response time for specific sensors identified in the WCAP. The allocations for these 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. Response time verification for other sensor types must be demonstrated by test.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1 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.

4.3.1.2 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.

4.3.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be verified to be within its limit at least once per 18 months.* Each verification shall include at least one logic train such that both logic trains are verified at least once per 36 months and one channel per function such that all channels are 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.

* Neutron detectors are exempt from response time testing.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 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.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.3.2.1 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 the frequencies shown in Table 4.3-2.

4.3.2.2 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.

4.3.2.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be verified to be within the limit at least once per 18 months. Each verification shall include at least one logic train such that both logic trains are verified at least once per 36 months and one channel per function such that all channels are 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.

INSTRUMENTATION

BASES

REACTOR TRIP SYSTEM AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION (Continued)

The verification of response time at the specified frequencies provides assurance that the reactor trip and ESF actuation associated with each channel is completed within the time limit assumed in the accident analyses. Response time limits for the Reactor Trip System and Engineered Safety Features Actuation System are maintained in Tables 7.2-5 and 7.3-16 of the Farley FSAR, respectively. 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 specific pressure and differential pressure sensor response times may be obtained from: (1) historical records based on acceptable response time tests (hydraulic, noise, or power interrupt tests), (2) in place, 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 channel response time for specific sensors identified in the WCAP. The allocations for these 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. Response time verification for other sensor types must be demonstrated by test.

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.

Alarm/trip setpoints for the containment purge have been established for a purge rate of 5,000 scfm in all MODES and for purge rates of 25,000 scfm and 50,000 scfm in MODES 4, 5, and 6. The containment purge setpoints are based on a release in which Xe-133 and Kr-85 are the predominant isotopes, on concentration values equal to or less than the effluent concentration limits stated in 10 CFR 20, Appendix B (to paragraphs 20.1001 - 20.2401), Table 2, Column 1 for these isotopes, and on a X/Q of 5.6×10^{-6} sec/m³ at the site boundary.

INSTRUMENTATION

BASES

RADIATION MONITORING INSTRUMENTATION Continued)

The alarm/trip setpoint for the fuel storage pool area has been established based on a flow rate of 13,000 scfm; a release in which Xe-133 and Kr-85 are the predominant isotopes, on concentration values equal to or less than the effluent concentration limits stated in 10 CFR 20, Appendix B (to paragraphs 20.1001 - 20.2401), Table 2, Column 1 for these isotopes, and on a X/Q of 5.6×10^{-6} sec/m³ at the site boundary.

3/4.3.3.2 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core. The OPERABILITY of this system is demonstrated by irradiating each detector used and determining the acceptability of its voltage curve.

For the purpose of measuring $F_Q(z)$, F_{AH}^N , and F_{xy} a full incore flux map is used. Quarter-core flux maps, as defined in WCAP-8648, June 1976, may be used in recalibration of the excore neutron flux detection system. Full incore flux maps or symmetric incore thimbles may be used for monitoring the QUADRANT POWER TILT RATIO when one Power Range Channel is inoperable.

ATTACHMENT II

Westinghouse letter CAW-94-565, dated January 11, 1994, "Application For Withholding Proprietary Information From Public Disclosure," with the following enclosures: Affidavit, Proprietary Information Notice, and Copyright Notice.

WCAP-13632, Proprietary Class 2, "Elimination of Pressure Sensor Response Time Testing Requirements," WOG Program MUHP-3040, Revision 1.

WCAP-13787, Proprietary Class 3, "Elimination of Pressure Sensor Response Time Testing Requirements," WOG Program MUHP-3040, Revision 1.