ATTACHMENT A

EXISTING SPECIFICATIONS AND BASES

UNIT 2

TABLE 4.3-1

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Manual Reactor Trip	N.A.	N.A.	#	1, 2, 3*, 4*, 5*
2. Linear Power Level - High	S	D(2,4), M(3,4), Q(4), #(4)	M	1, 2
3. Logarithmic Power Level - High	S	#(4)	M and S/U(1)	1, 2, 3, 4, 5
4. Pressurizer Pressure - High	S	#	M	1, 2
5. Pressurizer Pressure - Low	S	#	M	1, 2
6. Containment Pressure - High	S	#	M	1, 2
7. Steam Generator Pressure - Low	S	#	M	1, 2
8. Steam Generator Level - Low	S	#	M	1, 2
9. Local Power Density - High	S	D(2,4), #(4,5)	M, #(6)	1, 2
10. DNBR - Low	S	S(7), D(2,4), M(8), #(4,5)	M, #(6)	1, 2
11. Steam Generator Level - High	S	#	M	1, 2
12. Reactor Protection System Logic	N.A.	N.A.	M	1, 2, 3*, 4*, 5*

TABLE 4.3-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
13. Reactor Trip Breakers	N.A.	N.A.	M,(12)	1, 2, 3*, 4*, 5*
14. Core Protection Calculators	S	D(2,4),S(7) #(4,5),M(8)	M(11),#(6)	1, 2
15. CEA Calculators	S	#	M,#(6)	1, 2
16. Reactor Coolant Flow-Low	S	#	M	1, 2
17. Seismic-High	S	#	M	1, 2
18. Loss of Load	S	N.A.	M	1 (9)

TABLE 4.3-1 (Continued)

TABLE NOTATION

(11) - The monthly CHANNEL FUNCTIONAL TEST shall include verification that the correct values of addressable constants are installed in each OPERABLE CPC.

(12) - At least once per 18 months and following maintenance or adjustment of the reactor trip breakers, the CHANNEL FUNCTIONAL TEST shall include independent verification of the undervoltage and shunt trips.

TABLE 4.3-2

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. SAFETY INJECTION (SIAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Containment Pressure - High	S	(6)	M	1, 2, 3
c. Pressurizer Pressure - Low	S	(6)	M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3, 4
2. CONTAINMENT SPRAY (CSAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Containment Pressure -- High - High	S	(6)	M	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3
3. CONTAINMENT ISOLATION (CIAS)				
a. Manual CIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)(5)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Containment Pressure - High	S	(6)	M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3, 4
4. MAIN STEAM ISOLATION (MSIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Steam Generator Pressure - Low	S	(6)	M	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3
5. RECIRCULATION (RAS)				
a. Refueling Water Storage Tank - Low	S	R	M	1, 2, 3, 4
b. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3, 4
6. CONTAINMENT COOLING (CCAS)				
a. Manual CCAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. LOSS OF POWER (LOV)				
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	M	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				
i. Particulate/Iodine	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R (3)	All

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. FUEL HANDLING ISOLATION (FHIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	*
c. Automatic Actuation Logic	N.A.	N.A.	R(3)	*
12. CONTAINMENT PURGE ISOLATION (CPIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	N.A.
b. Airborne Radiation				
i. Gaseous	S	(6)	M	1,2,3,4,6
ii. Particulate	W	(6)	M	1,2,3,4,6
iii. Iodine	W	(6)	M	6
c. Containment Area Radiation (Gamma)	S	(6)	M	1,2,3,4,6
d. Automatic Actuation Logic	N.A.	N.A.	(3),(6)	1,2,3,4,6

TABLE NOTATION

(1) Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(2) Deleted.

(3) Testing of Automatic Actuation Logic shall include energization/de-energization of each initiation relay and verification of the OPERABILITY of each initiation relay.

(4) A subgroup relay test shall be performed which shall include the energization/de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay. Relays exempt from testing during plant operation shall be limited to only those relays associated with plant equipment which cannot be operated during plant operation. Relays not testable during plant operation shall be tested during each COLD SHUTDOWN exceeding 24 hours unless tested during the previous 6 months.

(5) Actuated equipment only; does not result in CIAS.

(6) At least once per refueling interval.

* With irradiated fuel in the storage pool.

3/4.3.1 and 3/4.3.2 REACTOR PROTECTIVE and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the reactor protective and Engineered Safety Features Actuation System instrumentation and bypasses ensure that 1) the associated Engineered Safety Features Actuation System action and/or reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

When a protection channel of a given process variable becomes inoperable, the inoperable channel may be placed in bypass until the next Onsite Review Committee meeting at which time the Onsite Review Committee will review and document their judgment concerning prolonged operation in bypass, channel trip, and/or repair. The goal shall be to return the inoperable channel to service as soon as practicable but in no case later than during the next COLD SHUTDOWN. This approach to bypass/trip in four channel protection systems is consistent with the applicable criteria of IEEE Standards 279, 323, 344 and 384.

The Core Protection Calculator (CPC) addressable constants are provided to allow calibration of the CPC system to more accurate indications of power level, RCS flow rate, axial flux shape, radial peaking factors and CEA deviation penalties. Administrative controls on changes and periodic checking of addressable constant values (see also Technical Specifications 3.3.1 and 6.8.1) ensure that inadvertent misloading of addressable constants into the CPCs is unlikely.

The redundancy and design of the Control Element Assembly Calculators (CEAC) provides reactor protection in the event one or both CEAC's becomes inoperable. If one CEAC is in test or inoperable, verification of CEAC position is performed at least every 4 hours. If the second CEAC fails, the CPC's will use DNBR and LPD penalty factors, which restrict reactor operation to some maximum fraction of RATED THERMAL POWER. If this maximum fraction is exceeded a reactor trip will occur.

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.

The measurement of response time at the specified frequencies provides assurance that the reactor protective and ESF actuation associated with each channel is completed within the time limit assumed in the accident analyses.

ATTACHMENT B

EXISTING SPECIFICATIONS AND BASES

UNIT 3

TABLE 4.3-1

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Manual Reactor Trip	N.A.	N.A.	#	1, 2, 3*, 4*, 5*
2. Linear Power Level - High	S	D(2,4),M(3,4), Q(4), #(4)	M	1, 2
3. Logarithmic Power Level - High	S	#(4)	M and S/U(1)	1, 2, 3, 4, 5
4. Pressurizer Pressure - High	S	#	M	1, 2
5. Pressurizer Pressure - Low	S	#	M	1, 2
6. Containment Pressure - High	S	#	M	1, 2
7. Steam Generator Pressure - Low	S	#	M	1, 2
8. Steam Generator Level - Low	S	#	M	1, 2
9. Local Power Density - High	S	D(2,4), #(4,5)	M, #(6)	1, 2
10. DNBR - Low	S	S(7), D(2,4), M(8), #(4,5)	M, #(6)	1, 2
11. Steam Generator Level - High	S	#	M	1, 2
12. Reactor Protection System Logic	N.A.	N.A.	M	1, 2, 3*, 4*, 5*

TABLE 4.3-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
13. Reactor Trip Breakers	N.A.	N.A.	M,(12)	1, 2, 3*, 4*, 5*
14. Core Protection Calculators	S	D(2,4), S(7), #(4,5), M(8)	M(11),#(6)	1, 2
15. CEA Calculators	S	#	M,#(6)	1, 2
16. Reactor Coolant Flow-Low	S	#	M	1, 2
17. Seismic-High	S	#	M	1, 2
18. Loss of Load	S	N.A.	M	1 (9)

TABLE 4.3-1 (Continued)

TABLE NOTATION

(11) - The monthly CHANNEL FUNCTIONAL TEST shall include verification that the correct values of addressable constants are installed in each OPERABLE CPC.

(12) - At least once per 18 months and following maintenance or adjustment of the reactor trip breakers, the CHANNEL FUNCTIONAL TEST shall include independent verification of the undervoltage and shunt trips.

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. SAFETY INJECTION (SIAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Containment Pressure - High	S	(6)	M	1, 2, 3
c. Pressurizer Pressure - Low	S	(6)	M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3, 4
2. CONTAINMENT SPRAY (CSAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Containment Pressure -- High - High	S	(6)	M	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3
3. CONTAINMENT ISOLATION (CIAS)				
a. Manual CIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)(5)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Containment Pressure - High	S	(6)	M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3, 4
4. MAIN STEAM ISOLATION (MSIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Steam Generator Pressure - Low	S	(6)	M	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3
5. RECIRCULATION (RAS)				
a. Refueling Water Storage Tank - Low	S	R	M	1, 2, 3, 4
b. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3, 4
6. CONTAINMENT COOLING (CCAS)				
a. Manual CCAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. LOSS OF POWER (LOV)				
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	M	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	M(1)(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				
i. Particulate/Iodine	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R (3)	All

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. FUEL HANDLING ISOLATION (FHIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	*
c. Automatic Actuation Logic	N.A.	N.A.	R(3)	*
12. CONTAINMENT PURGE ISOLATION (CPIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	N.A.
b. Airborne Radiation				
i. Gaseous	S	(6)	M	1,2,3,4,6
ii. Particulate	W	(6)	M	1,2,3,4,6
iii. Iodine	W	(6)	M	6
c. Containment Area Radiation (Gamma)	S	(6)	M	1,3,3,4,6
d. Automatic Actuation Logic	N.A.	N.A.	(3), (6)	1,2,3,4,6

TABLE NOTATION

(1) Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(2) Deleted.

(3) Testing of Automatic Actuation Logic shall include energization/de-energization of each initiation relay and verification of the OPERABILITY of each initiation relay.

(4) A subgroup relay test shall be performed which shall include the energization/de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay. Relays exempt from testing during plant operation shall be limited to only those relays associated with plant equipment which cannot be operated during plant operation. Relays not testable during plant operation shall be tested during each COLD SHUTDOWN exceeding 24 hours unless tested during the previous 6 months.

(5) Actuated equipment only; does not result in CIAS.

(6) At least once per refueling interval.

* With irradiated fuel in the storage pool.

3/4.3.1 and 3/4.3.2 REACTOR PROTECTIVE and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the reactor protective and Engineered Safety Features Actuation System instrumentation and bypasses ensure that 1) the associated Engineered Safety Features Actuation System action and/or reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

When a protection channel of a given process variable becomes inoperable, the inoperable channel may be placed in bypass until the next Onsite Review Committee meeting at which time the Onsite Review Committee will review and document their judgment concerning prolonged operation in bypass, channel trip, and/or repair. The goal shall be to return the inoperable channel to service as soon as practicable but in no case later than during the next COLD SHUTDOWN. This approach to bypass/trip in four channel protection systems is consistent with the applicable criteria of IEEE Standards 279, 323, 344 and 384.

The Core Protection Calculator (CPC) addressable constants are provided to allow calibration of the CPC system to more accurate indications of power level, RCS flow rate, axial flux shape, radial peaking factors and CEA deviation penalties. Administrative controls on changes and periodic checking of addressable constant values (see also Technical Specifications 3.3.1 and 6.8.1) ensure that inadvertent misloading of addressable constants into the CPCs is unlikely.

The redundancy and design of the Control Element Assembly Calculators (CEAC) provides reactor protection in the event one or both CEAC's becomes inoperable. If one CEAC is in test or inoperable, verification of CEAC position is performed at least every 4 hours. If the second CEAC fails, the CPC's will use DNBR and LPD penalty factors, which restrict reactor operation to some maximum fraction of RATED THERMAL POWER. If this maximum fraction is exceeded a reactor trip will occur.

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.

The measurement of response time at the specified frequencies provides assurance that the reactor protective and ESF actuation associated with each channel is completed within the time limit assumed in the accident analyses.

ATTACHMENT C

PROPOSED SPECIFICATIONS AND BASES

UNIT 2

TABLE 4.3-1

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Manual Reactor Trip	N.A.	N.A.	#	1, 2, 3*, 4*, 5*
2. Linear Power Level - High	S	D(2,4), M(3,4), Q(4), #(4)	(M) → Q	1, 2
3. Logarithmic Power Level - High	S	#(4)	(M) → Q and S/U(1)	1, 2, 3, 4, 5
4. Pressurizer Pressure - High	S	#	(M) → Q	1, 2
5. Pressurizer Pressure - Low	S	#	(M) → Q	1, 2
6. Containment Pressure - High	S	#	(M) → Q	1, 2
7. Steam Generator Pressure - Low	S	#	(M) → Q	1, 2
8. Steam Generator Level - Low	S	#	(M) → Q	1, 2
9. Local Power Density - High	S	D(2,4), #(4,5)	(M) → Q, #(6)	1, 2
10. DNBR - Low	S	S(7), D(2,4), M(8), #(4,5)	(M) → Q, #(6)	1, 2
11. Steam Generator Level - High	S	#	(M) → Q	1, 2
12. Reactor Protection System Logic	N.A.	N.A.	(M) → Q	1, 2, 3*, 4*, 5*

TABLE 4.3-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
13. Reactor Trip Breakers	N.A.	N.A.	M,(12)	1, 2, 3*, 4*, 5*
14. Core Protection Calculators	S	D(2,4),S(7) #(4,5),M(8)	M → Q(11),#(6)	1, 2
15. CEA Calculators	S	#	M → Q,#(6)	1, 2
16. Reactor Coolant Flow-Low	S	#	M → Q	1, 2
17. Seismic-High	S	#	M → Q	1, 2
18. Loss of Load	S	N.A.	M → Q	1 (9)

TABLE 4.3-1 (Continued)

TABLE NOTATION

quarterly

(11) - The monthly CHANNEL FUNCTIONAL TEST shall include verification that the correct values of addressable constants are installed in each OPERABLE CPC.

(12) - At least once per 18 months and following maintenance or adjustment of the reactor trip breakers, the CHANNEL FUNCTIONAL TEST shall include independent verification of the undervoltage and shunt trips.

TABLE 4.3-2

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. SAFETY INJECTION (SIAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Containment Pressure - High	S	(6)	Q ← M	1, 2, 3
c. Pressurizer Pressure - Low	S	(6)	Q ← M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3, 4
2. CONTAINMENT SPRAY (CSAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Containment Pressure -- High - High	S	(6)	Q ← M	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3
3. CONTAINMENT ISOLATION (CIAS)				
a. Manual CIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)(5)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Containment Pressure - High	S	(6)	Q ← M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3, 4
4. MAIN STEAM ISOLATION (MSIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Steam Generator Pressure - Low	S	(6)	Q ← M	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3
5. RECIRCULATION (RAS)				
a. Refueling Water Storage Tank - Low	S	R	Q ← M	1, 2, 3, 4
b. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3, 4
6. CONTAINMENT COOLING (CCAS)				
a. Manual CCAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. LOSS OF POWER (LOV)				
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	Q ← M	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	Q ← M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				
i. Particulate/Iodine	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R (3)	All

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. FUEL HANDLING ISOLATION (FHIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	*
c. Automatic Actuation Logic	N.A.	N.A.	R(3)	*
12. CONTAINMENT PURGE ISOLATION (CPIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	N.A.
b. Airborne Radiation				
i. Gaseous	S	(6)	M	1,2,3,4,6
ii. Particulate	W	(6)	M	1,2,3,4,6
iii. Iodine	W	(6)	M	6
c. Containment Area Radiation (Gamma)	S	(6)	M	1,2,3,4,6
d. Automatic Actuation Logic	N.A.	N.A.	(3),(6)	1,2,3,4,6

TABLE NOTATION

(1) Deleted ~~Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.~~

(2) Deleted.

(3) Testing of Automatic Actuation Logic shall include energization/de-energization of each initiation relay and verification of the OPERABILITY of each initiation relay.

(4) A subgroup relay test shall be performed which shall include the energization/de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay. Relays exempt from testing during plant operation shall be limited to only those relays associated with plant equipment which cannot be operated during plant operation. Relays not testable during plant operation shall be tested during each COLD SHUTDOWN exceeding 24 hours unless tested during the previous 6 months.

(5) Actuated equipment only; does not result in CIAS.

(6) At least once per refueling interval.

* With irradiated fuel in the storage pool.

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, "RPS/ESFAS Extended Test Interval Evaluation," as supplemented.

3/4.3.1 and 3/4.3.2 REACTOR PROTECTIVE and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the reactor protective and Engineered Safety Features Actuation System instrumentation and bypasses ensure that 1) the associated Engineered Safety Features Actuation System action and/or reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

When a protection channel of a given process variable becomes inoperable, the inoperable channel may be placed in bypass until the next Onsite Review Committee meeting at which time the Onsite Review Committee will review and document their judgment concerning prolonged operation in bypass, channel trip, and/or repair. The goal shall be to return the inoperable channel to service as soon as practicable but in no case later than during the next COLD SHUTDOWN. This approach to bypass/trip in four channel protection systems is consistent with the applicable criteria of IEEE Standards 279, 323, 344 and 384.

The Core Protection Calculator (CPC) addressable constants are provided to allow calibration of the CPC system to more accurate indications of power level, RCS flow rate, axial flux shape, radial peaking factors and CEA deviation penalties. Administrative controls on changes and periodic checking of addressable constant values (see also Technical Specifications 3.3.1 and 6.8.1) ensure that inadvertent misloading of addressable constants into the CPCs is unlikely.

The redundancy and design of the Control Element Assembly Calculators (CEAC) provides reactor protection in the event one or both CEAC's becomes inoperable. If one CEAC is in test or inoperable, verification of CEAC position is performed at least every 4 hours. If the second CEAC fails, the CPC's will use DNBR and LPD penalty factors, which restrict reactor operation to some maximum fraction of RATED THERMAL POWER. If this maximum fraction is exceeded a reactor trip will occur.

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.

The measurement of response time at the specified frequencies provides assurance that the reactor protective and ESF actuation associated with each channel is completed within the time limit assumed in the accident analyses.

ATTACHMENT D

PROPOSED SPECIFICATIONS AND BASES

UNIT 3

TABLE 4.3-1

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Manual Reactor Trip	N.A.	N.A.	#	1, 2, 3*, 4*, 5*
2. Linear Power Level - High	S	D(2,4), M(3,4), Q(4), #(4)	M → Q	1, 2
3. Logarithmic Power Level - High	S	#(4)	M → Q and S/U(1)	1, 2, 3, 4, 5
4. Pressurizer Pressure - High	S	#	M → Q	1, 2
5. Pressurizer Pressure - Low	S	#	M → Q	1, 2
6. Containment Pressure - High	S	#	M → Q	1, 2
7. Steam Generator Pressure - Low	S	#	M → Q	1, 2
8. Steam Generator Level - Low	S	#	M → Q	1, 2
9. Local Power Density - High	S	D(2,4), #(4,5)	M → Q, #(6)	1, 2
10. DNBR - Low	S	S(7), D(2,4), M(8), #(4,5)	M → Q, #(6)	1, 2
11. Steam Generator Level - High	S	#	M → Q	1, 2
12. Reactor Protection System Logic	N.A.	N.A.	M → Q	1, 2, 3*, 4*, 5*

TABLE 4.3-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
13. Reactor Trip Breakers	N.A.	N.A.	M,(12)	1, 2, 3*, 4*, 5*
14. Core Protection Calculators	S	D(2,4), S(7), #(4,5), M(8)	M → Q (11),#(6)	1, 2
15. CEA Calculators	S	#	M → Q,#(6)	1, 2
16. Reactor Coolant Flow-Low	S	#	M → Q	1, 2
17. Seismic-High	S	#	M → Q	1, 2
18. Loss of Load	S	N.A.	M → Q	1 (9)

TABLE 4.3-1 (Continued)

TABLE NOTATION

(11) - The ~~monthly~~ quarterly CHANNEL FUNCTIONAL TEST shall include verification that the correct values of addressable constants are installed in each OPERABLE CPC.

(12) - At least once per 18 months and following maintenance or adjustment of the reactor trip breakers, the CHANNEL FUNCTIONAL TEST shall include independent verification of the undervoltage and shunt trips.

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. SAFETY INJECTION (SIAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Containment Pressure - High	S	(6)	Q ← M	1, 2, 3
c. Pressurizer Pressure - Low	S	(6)	Q ← M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3, 4
2. CONTAINMENT SPRAY (CSAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Containment Pressure -- High - High	S	(6)	Q ← M	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3
3. CONTAINMENT ISOLATION (CIAS)				
a. Manual CIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)(5)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Containment Pressure - High	S	(6)	Q ← M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3, 4
4. MAIN STEAM ISOLATION (MSIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. Steam Generator Pressure - Low	S	(6)	Q ← M	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3
5. RECIRCULATION (RAS)				
a. Refueling Water Storage Tank - Low	S	R	Q ← M	1, 2, 3, 4
b. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3, 4
6. CONTAINMENT COOLING (CCAS)				
a. Manual CCAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3, 4
c. Automatic Actuation Logic	N.A.	N.A.	Q ← M(1)(3), SA(4)	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. LOSS OF POWER (LOV)				
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage and Degraded Voltage)	S	(6)	(6)	1, 2, 3, 4
8. EMERGENCY FEEDWATER (EFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	1, 2, 3
b. SG Level (A/B)-Low and ΔP (A/B) - High	S	(6)	Q ← M	1, 2, 3
c. SG Level (A/B) - Low and No Pressure - Low Trip (A/B)	S	(6)	Q ← M	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	Q ← M(~~1~~ 8)(3), SA(4)	1, 2, 3
9. CONTROL ROOM ISOLATION (CRIS)				
a. Manual CRIS (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Manual SIAS (Trip Buttons)	N.A.	N.A.	R	N.A.
c. Airborne Radiation				
i. Particulate/Iodine	S	R	M	All
ii. Gaseous	S	R	M	All
d. Automatic Actuation Logic	N.A.	N.A.	R(3)	All
10. TOXIC GAS ISOLATION (TGIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Chlorine - High	S	R	M	All
c. Ammonia - High	S	R	M	All
d. Butane/Propane - High	S	R	M	All
e. Automatic Actuation Logic	N.A.	N.A.	R (3)	All

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. FUEL HANDLING ISOLATION (FHIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	*
c. Automatic Actuation Logic	N.A.	N.A.	R(3)	*
12. CONTAINMENT PURGE ISOLATION (CPIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	(6)	N.A.
b. Airborne Radiation				
i. Gaseous	S	(6)	M	1,2,3,4,6
ii. Particulate	W	(6)	M	1,2,3,4,6
iii. Iodine	W	(6)	M	6
c. Containment Area Radiation (Gamma)	S	(6)	M	1,3,3,4,6
d. Automatic Actuation Logic	N.A.	N.A.	(3), (6)	1,2,3,4,6

TABLE NOTATION

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(1) ~~Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.~~

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(3) Testing of Automatic Actuation Logic shall include energization/de-energization of each initiation relay and verification of the OPERABILITY of each initiation relay.

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