April 9, 199

Docket No. 50-461

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Mr. Frank A. Spangenberg
Manager - Licensing and Safety
Clinton Power Station
P. O. Box 678
Mail Code V920
Clinton, Illinois 61727

Dear Mr. Spangenberg:

SUBJECT: AMENDMENT NO. 71 TO FACILITY OPERATING LICENSE NO. NPF-62 (TAC NO. M82013)

The Commission has issued the enclosed Amendment No. 71 to Facility Operating License No. NPF-62 for the Clinton Power Station, Unit No. 1 (CPS). This amendment revises the Technical Specifications (TS) in response to your application dated September 20, 1991 (U-601871) and supplemental letters dated August 17, 1992 (U-602025) and February 17, 1993 (U-602078).

The amendment revises both surveillance test intervals and allowed out-of-service times for Reactor Protection System, Emergency Core Cooling System, Control Rod Block System, and Containment and Reactor Vessel Isolation Control System Instrumentation contained in the CPS TS. In addition, several administrative changes to the TS are contained in this amendment.

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

Sincerely,

Original signed by:
Douglas V. Pickett, Senior Project Manager
Project Directorate III-2
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 71 to License No. NPF-62
2. Safety Evaluation

cc w/enclosures:
See next page

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Date	11/04/92	04/09/93	04/09/93

DOCUMENT NAME: CLI82013.AMD *See Previous Concurrence

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DF01

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Illinois Power Company

Clinton Power Station
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ILLINOIS POWER COMPANY, ET AL.

DOCKET NO. 50-461

CLINTON POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 71
License No. NPF-62

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Illinois Power Company* (IP), and Soyland Power Cooperative, Inc. (the licensees) dated September 20, 1991, and supplemented by letters dated August 17, 1992, and February 17, 1993, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-62 is hereby amended to read as follows:

*Illinois Power Company is authorized to act as agent for Soyland Power Cooperative, Inc. and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 71 , are hereby incorporated into this license. Illinois Power Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective immediately to be implemented within 30 days from its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

James E. Dyer

James E. Dyer, Director
Project Directorate III-2
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of issuance: April 9, 1993

FACILITY OPERATING LICENSE NO. NPF-62

DOCKET NO. 50-461

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages, indicated by an asterisk, are provided to maintain document completeness.

Remove	Insert	Remove	Insert
3/4 3-1	3/4 3-1	3/4 3-54	3/4 3-54
3/4 3-2*	3/4 3-2*	3/4 3-57	3/4 3-57
3/4 3-7*	3/4 3-7*		
3/4 3-8	3/4 3-8	3/4 3-58	3/4 3-58
3/4 3-9	3/4 3-9	3/4 3-59*	3/4 3-59*
3/4 3-10	3/4 3-10	3/4 3-60	3/4 3-60
3/4 3-11	3/4 3-11	3/4 3-61*	3/4 3-61*
3/4 3-12	3/4 3-12	3/4 3-62	3/4 3-62
3/4 3-17*	3/4 3-17*	3/4 3-63*	3/4 3-63*
3/4 3-18	3/4 3-18	3/4 3-64	3/4 3-64
3/4 3-27	3/4 3-27	3/4 3-65	3/4 3-65
3/4 3-28	3/4 3-28	3/4 3-66*	3/4 3-66*
3/4 3-29	3/4 3-29	3/4 3-67*	3/4 3-67*
3/4 3-30	3/4 3-30	3/4 3-68	3/4 3-68
3/4 3-31	3/4 3-31	3/4 3-69	3/4 3-69
3/4 3-32	3/4 3-32	3/4 3-70*	3/4 3-70*
3/4 3-33	3/4 3-33	3/4 3-71*	3/4 3-71*
3/4 3-34	3/4 3-34	3/4 3-72	3/4 3-72
3/4 3-35	3/4 3-35	3/4 3-73	3/4 3-73
3/4 3-36	3/4 3-36	3/4 3-74*	3/4 3-74*
3/4 3-37	3/4 3-37	3/4 3-97	3/4 3-97
3/4 3-38	3/4 3-38	3/4 3-98	3/4 3-98
---	3/4 3-38a	3/4 3-99	3/4 3-99
3/4 3-43*	3/4 3-43*	3/4 3-100	3/4 3-100
3/4 3-44	3/4 3-44	3/4 3-101*	3/4 3-101*
3/4 3-45	3/4 3-45	3/4 3-102	3/4 3-102
3/4 3-46	3/4 3-46	3/4 4-9	3/4 4-9
3/4 3-47	3/4 3-47	3/4 4-10	3/4 4-10
3/4 3-48*	3/4 3-48*	3/4 4-11	3/4 4-11
3/4 3-49	3/4 3-49		
3/4 3-50*	3/4 3-50*		
3/4 3-51	3/4 3-51		
3/4 3-52	3/4 3-52		
3/4 3-53*	3/4 3-53*		

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the reactor protection system instrumentation channels shown in Table 3.3.1-1 shall be OPERABLE* with the REACTOR PROTECTION SYSTEM RESPONSE TIME as shown in Table 3.3.1-2.

APPLICABILITY: As shown in Table 3.3.1-1.

ACTION:

a. For all functional units of Table 3.3.1-1 other than Reactor Mode Switch Shutdown Position.

   1. With one of the four channels required for any Trip Function inoperable, operation may continue provided the inoperable channel is placed in the tripped condition within 48 hours. The provisions of Specification 3.0.4 are not applicable.

   2. With two of the four channels required for any Trip Function inoperable, place one channel in the tripped condition within six hours provided no tripped channel for that Trip Function already exists. The provisions of Specification 3.0.4 are not applicable.

   3. With three of the four channels required for any Trip Function inoperable, take the ACTION required by Table 3.3.1-1.

b. For Reactor Mode Switch Shutdown Position take the ACTION as shown in Table 3.3.1-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1 Each reactor protection system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.1.1-1.

4.3.1.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. Reactor protection system divisional logic and portions of the channel coincident logic shall be manually tested independent of the SELF TEST SYSTEM during each refueling outage such that all trip functions are tested at least once every four fuel cycles.

---

*A channel may be placed in an inoperable status for up to 6 hours for required surveillance provided at least two OPERABLE channels are monitoring that parameter.

SURVEILLANCE REQUIREMENTS (Continued)

4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME of each reactor trip functional unit shown in Table 3.3.1-2 shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least two logic trains such that all logic trains are tested at least once per 36 months and one channel per trip 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.

TABLE 3.3.1-2

REACTOR PROTECTION SYSTEM RESPONSE TIMES

FUNCTIONAL UNIT	RESPONSE TIME (Seconds)
1. Intermediate Range Monitors:	
a. Neutron Flux - High	NA
b. Inoperative	NA
2. Average Power Range Monitor*:	
a. Neutron Flux - High, Setdown	NA
b. Flow Biased Simulated Thermal Power - High	≤ 0.09**
c. Neutron Flux - High	≤ 0.09
d. Inoperative	NA
3. Reactor Vessel Steam Dome Pressure - High	≤ 0.33
4. Reactor Vessel Water Level - Low, Level 3	≤ 1.03
5. Reactor Vessel Water Level - High, Level 8	≤ 1.03
6. Main Steam Line Isolation Valve - Closure	≤ 0.04
7. Main Steam Line Radiation - High	NA
8. Drywell Pressure - High	NA
9. Scram Discharge Volume Water Level - High	
a. Level Transmitter	NA
b. Float Switches	NA
10. Turbine Stop Valve - Closure	≤ 0.04
11. Turbine Control Valve Fast Closure, Valve Trip System Oil Pressure - Low	≤ 0.05#
12. Reactor Mode Switch Shutdown Position	NA
13. Manual Scram	NA

*Neutron detectors are exempt from response time testing. Response time shall be measured from the detector output or from the input of the first electronic component in the channel.

**Not including a simulated thermal power time constant of 6 ± 0.6 seconds.

#Measured from start of turbine control valve fast closure.

TABLE 4.3.1.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION[a]	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
1. Intermediate Range Monitors:				
a. Neutron Flux - High	S/U,S,(b) S	S/U[c], W W	R R	2 3, 4, 5
b. Inoperative	NA	W	NA	2, 3, 4, 5
2. Average Power Range Monitor:[f]				
a. Neutron Flux - High, Setdown	S/U,S,(b) S	S/U[c], W W	SA SA	2 3, 4, 5
b. Flow-Biased Simulated Thermal Power - High	S	S/U[c], Q	W[d][e], SA, R[i]	1
c. Neutron Flux - High	S	S/U[c], Q	W[d][e], SA.	1
d. Inoperative	NA	Q	NA	1, 2, 3, 4, 5
3. Reactor Vessel Steam Dome Pressure - High	S	Q	R[g]	1, 2[j]
4. Reactor Vessel Water Level - Low, Level 3	S	Q	R[g]	1, 2
5. Reactor Vessel Water Level - High, Level 8	S	Q	R[g]	1
6. Main Steam Line Isolation Valve - Closure	NA	Q	R	1
7. Main Steam Line Radiation - High	S	Q	R	1, 2[j]
8. Drywell Pressure - High	S	Q	R[g]	1, 2[l]

TABLE 4.3.1.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION[a]	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
9. Scram Discharge Volume Water Level - High				
a. Level Transmitter	S	Q	R[g]	1, 2, 5[k]
b. Float Switches	NA	Q	R	1, 2, 5[k]
10. Turbine Stop Valve - Closure	NA	Q[m]	R[m]	1
11. Turbine Control Valve Fast Closure Valve Trip System Oil Pressure - Low	NA	Q[m]	R[m]	1
12. Reactor Mode Switch Shutdown Position	NA	R	NA	1, 2, 3, 4, 5
13. Manual Scram	NA	Q	NA	1, 2, 3, 4, 5

TABLE 4.3.1.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

(a) Neutron detectors may be excluded from CHANNEL CALIBRATION.

(b) The IRM and SRM channels shall be determined to overlap for at least 1/2 decade during each startup after entering OPERATIONAL CONDITION 2 and the IRM and APRM channels shall be determined to overlap for at least 1 decade during each controlled shutdown, if not performed within the previous 7 days.

(c) Within 24 hours prior to startup, if not performed within the previous 7 days.

(d) This calibration shall consist of the adjustment of the APRM channel to conform to the power values calculated by a heat balance during OPERATIONAL CONDITION 1 when THERMAL POWER $\geq$ 25% of RATED THERMAL POWER. Adjust the APRM channel if the absolute difference is greater than 2% of RATED THERMAL POWER.

(e) This calibration shall consist of a setpoint verification of the Neutron Flux-High and the Flow Biased Simulated Thermal Power-High trip functions. The Flow Biased Simulated Thermal-High trip function is verified using a calibrated flow signal.

(f) The LPRMs shall be calibrated at least once per 1000 effective full power hours (EFPH) using the TIP system.

(g) Calibrate the analog trip module at least once per 92 days.

(h) Deleted.

(i) This calibration shall consist of verifying the 6±0.6 second simulated thermal power time constant.

(j) This function is not required to be OPERABLE when the reactor pressure vessel head is removed per Specification 3.10.1.

(k) With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

(l) This function is not required to be OPERABLE when DRYWELL INTEGRITY is not required to be OPERABLE per Special Test Exception 3.10.1.

(m) The CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION shall include the turbine first stage pressure instruments.

3/4.3.2 CONTAINMENT AND REACTOR VESSEL ISOLATION CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.2 The containment and reactor vessel isolation control system (CRVICS) channels shown in Table 3.3.2-1 shall be OPERABLE* with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2 and with ISOLATION SYSTEM RESPONSE TIME as shown in Table 3.3.2-3.

APPLICABILITY: As shown in Table 3.3.2-1.

ACTION:

a. With a CRVICS channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. For CRVICS Main Steam Line Isolation Trip Functions:

   1. With one of the four channels required for any Trip Function inoperable, operation may continue provided the inoperable channel is placed in the tripped condition within 48 hours. The provisions of Specification 3.0.4 are not applicable.

   2. With two of the four channels required for any Trip Function inoperable, place one channel in the tripped condition within six hours provided no tripped channel for that Trip Function already exists. The provisions of Specification 3.0.4 are not applicable.

   3. With three of the four channels required for any Trip Function inoperable, take the ACTION required by Table 3.3.2-1.

c. For other CRVICS Isolation Trip Functions:

   1. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system, place the inoperable channel(s) and/or that trip system in the tripped condition** within 24 hours. The provisions of Specification 3.0.4 are not applicable.

---

*For CRVICS Main Steam Line Isolation Trip Function, a channel may be placed in an inoperable status for up to 6 hours for required surveillance provided at least two OPERABLE channels are monitoring that parameter.

For other CRVICS Isolation Trip Function, a channel may be placed in an in operable status for up to 6 hours for required surveillance provided the requirements of Table 3.3.2-1 are fulfilled.

**An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, the inoperable channel shall be restored to OPERABLE status within 6 hours or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.

LIMITING CONDITION FOR OPERATION (Continued)

3.3.2 ACTION (Continued):

2. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems, place at least one trip system* in the tripped condition within 1 hour and take the ACTION required by Table 3.3.2-1.

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each CRVICS channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.2.1-1.

4.3.2.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. CRVICS main steam line isolation divisional logic and portions of the channel coincident logic shall be manually tested independent of the SELF TEST SYSTEM during each refueling outage. Each of the two trip systems or divisions of the CRVICS trip system logic shall be alternately and manually tested independent of the SELF TEST SYSTEM during every other refueling outage. All manual testing shall be completed such that all trip functions are tested at least once every four fuel cycles.

4.3.2.3 The CRVICS RESPONSE TIME of each CRVICS trip function shown in Table 3.3.2-3 shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one logic train tested at least once per 36 months, and one channel per trip 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 CRVICS trip function.

*The trip system need not be placed in the tripped condition if this would cause the Trip Function to occur. When a trip system can be placed in the tripped condition without causing the Trip Function to occur, place the trip system with the most inoperable channels in the tripped condition; if both systems have the same number of inoperable channels, place either trip system in the tripped condition.

TABLE 3.3.2-1 (Continued)

CRVICS INSTRUMENTATION

TRIP FUNCTION	ISOLATION SIGNAL (q)	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM	APPLICABLE OPERATIONAL CONDITION	ACTION
5. RHR SYSTEM ISOLATION				
a. RHR Heat Exchanger A, B Ambient Temperature - High	T	1/room[k]	1, 2, 3	28
b. RHR Heat Exchanger A, B ΔTemp. - High	S	1/room[k]	1, 2, 3	28
c. Reactor Vessel Water Level - Low, Level 3	A	2[a]	1, 2, 3	28
d. Reactor Vessel Water Level - Low Low Low, Level 1	U	2[k]	1, 2, 3	28
e. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	X	2[a]	1, 2, 3	28
f. Drywell Pressure - High				
1) RHR Test Lines	L	2[k]	1, 2, 3	28
2) Fuel Pool Cooling	L	2[a]	1, 2, 3	28
g. Manual Initiation	R	1	1, 2, 3	26

TABLE 3.3.2-1 (Continued)
CRVICS INSTRUMENTATION

TABLE NOTATIONS

\# When handling irradiated fuel in the primary or secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

\## When handling irradiated fuel in the primary containment (building) and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

* With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

** When any turbine stop valve is greater than 95% open or the reactor mode switch is in the run position.

† Main steam line isolation trip functions have 2-out-of-4 isolation logic except for the main steam line flow - high trip function which has 2-out-of-4 isolation logic for each main steam line.

(a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

(b) Also actuates the standby gas treatment system.

(c) Deleted

(d) Also trips and isolates the mechanical vacuum pumps.

(e) Isolates RWCU valves 1G33-F001 and 1G33-F004 only.

(f) Also actuates secondary containment ventilation isolation dampers.

(g) Manual Switch closes RWCU system inboard isolation valves F001, F028, F053, F040 and outboard isolation valves F004, F039, F034 and F054.

(h) Vacuum breaker isolation valves require RCIC system steam supply pressure low coincident with drywell pressure high for isolation of vacuum breaker isolation valves.

(i) A single manual isolation switch isolates outboard steam supply line isolation valve (F064) and the RCIC pump suction from suppression pool valve (F031) only following a manual or automatic (Reactor Vessel Water Level 2) RCIC system initiation.

(j) Only actuates secondary containment ventilation isolation dampers.

(k) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the trip condition provided that the redundant trip system is OPERABLE and monitoring that parameter.

TABLE 4.3.2.1-1

CRVICS INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
1. PRIMARY AND SECONDARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R(b)	1, 2, 3, #
b. Reactor Vessel Water Level - Low Low, Level 2 (ECCS Div. I and II)	S	Q	R(b)	1, 2, 3
c. Reactor Vessel Water Level - Low Low, Level 2 (ECCS Div. III)	S	Q	R(b)	1, 2, 3
d. Drywell Pressure - High	S	Q	R(b)	1, 2, 3
e. Drywell Pressure - High (ECCS Div. I and II)	S	Q	R(b)	1, 2, 3
f. Drywell Pressure - High (ECCS Div. III)	S	Q	R(b)	1, 2, 3
g. Containment Building Fuel Transfer Pool Ventilation Plenum Radiation - High	S	Q	R	##
h. Containment Building Exhaust Radiation - High	S	Q	R	1, 2, 3, #
i. Containment Building Continuous Containment Purge (CCP) Exhaust Radiation - High	S	Q	R	1, 2, 3, #

TABLE 4.3.2.1-1 (Continued)

CRVICS INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
1. PRIMARY AND SECONDARY CONTAINMENT ISOLATION (Continued)				
j. Reactor Vessel Water Level-Low Low Low, Level 1	S	Q	R(b)	1, 2, 3, #
k. Containment Pressure - High	S	Q	R	1, 2, 3, #
l. Main Steam Line Radiation - High	S	Q	R	1, 2, 3
m. Fuel Building Exhaust Radiation - High	S	Q	R	1, 2, 3, #
n. Manual Initiation	NA	R	NA	1, 2, 3, #
2. MAIN STEAM LINE ISOLATION				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R(b)	1, 2, 3
b. Main Steam Line Radiation - High	S	Q	R	1, 2, 3
c. Main Steam Line Pressure - Low	S	Q	R(b)	1
d. Main Steam Line Flow - High	S	Q	R(b)	1, 2, 3
e. Condenser Vacuum - Low	S	Q	R(b)	1, 2**, 3**
f. Main Steam Line Tunnel Temp. - High	S	Q	R	1, 2, 3
g. Main Steam Line Tunnel Δ Temp. - High	S	Q	R	1, 2, 3
h. Main Steam Line Turbine Bldg. Temp. - High	S	Q	R	1, 2, 3
i. Manual Initiation	NA	R	NA	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

CRVICS INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
3. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High	S	Q	R	1, 2, 3
b. Δ Flow Timer	NA	Q	Q	1, 2, 3
c. Equipment Area Temp. - High				
1. Pump Rooms - A, B, C	S	Q	R	1, 2, 3
2. Heat Exchanger Rooms - East, West	S	Q	R	1, 2, 3
d. Equipment Area Δ Temp. - High				
1. Pump Rooms - A, B, C	S	Q	R	1, 2, 3
2. Heat Exchanger Rooms - East, West	S	Q	R	1, 2, 3
e. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R[b]	1, 2, 3, #
f. Main Steam Line Tunnel Ambient Temp. - High	S	Q	R	1, 2, 3
g. Main Steam Line Tunnel Δ Temp. - High	S	Q	R	1, 2, 3
h. SLCS Initiation	NA	Q[a]	NA	1, 2, 5*
i. Manual Initiation	NA	R	NA	1, 2, 3, #
4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION				
a. RCIC Steam Line Flow - High	S	Q	R[b]	1, 2, 3
b. RCIC Steam Line Flow - High Timer	NA	Q	R	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

CRVICS INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION (Continued)				
c. RCIC Steam Supply Pressure - Low	S	Q	R(b)	1, 2, 3
d. RCIC Turbine Exhaust Diaphragm Pressure - High	S	Q	R(b)	1, 2, 3
e. RCIC Equipment Room Ambient Temperature - High	S	Q	R	1, 2, 3
f. RCIC Equipment Room Δ Temp. - High	S	Q	R	1, 2, 3
g. Main Steam Line Tunnel Ambient Temp. - High	S	Q	R	1, 2, 3
h. Main Steam Line Tunnel Δ Temp. - High	S	Q	R	1, 2, 3
i. Main Steam Line Tunnel Temp. Timer	NA	Q	R	1, 2, 3
j. Drywell pressure - High	S	Q	R(b)	1, 2, 3
k. Manual Initiation	NA	R	NA	1, 2, 3
l. RHR/RCIC Steam Line Flow - High	S	Q	R(b)	1, 2, 3
m. RHR Heat Exchanger A, B Ambient Temperature - High	S	Q	R	1, 2, 3
n. RHR Heat Exchanger A, B Δ Temp. - High	S	Q	R	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

CRVICS INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
5. RHR SYSTEM ISOLATION				
a. RHR Heat Exchanger Rooms A, B Ambient Temp. - High	S	Q	R	1, 2, 3
b. RHR Heat Exchanger Rooms A, B Δ Temp. - High	S	Q	R	1, 2, 3
c. Reactor Vessel Water Level - Low, Level 3	S	Q	R(b)	1, 2, 3
d. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R(b)	1, 2, 3
e. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	S	Q	R(b)	1, 2, 3
f. Drywell Pressure - High				
1) RHR Test Line	S	Q	R(b)	1, 2, 3
2) Fuel Pool Cooling	S	Q	R(b)	1, 2, 3
g. Manual Initiation	NA	R	NA	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

CRVICS INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

When handling irradiated fuel in either the secondary or the primary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

When handling irradiated fuel in the primary containment (building) and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

* With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

** When any turbine stop valve is greater than 95% open or the reactor mode switch is in the run position.

(a) Each train or logic channel shall be tested at least every other 92 days.

(b) Calibrate the analog trip modules at least once per 92 days.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3 The emergency core cooling system (ECCS) actuation instrumentation channels shown in Table 3.3.3-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2 and with EMERGENCY CORE COOLING SYSTEM RESPONSE TIME as shown in Table 3.3.3-3.

APPLICABILITY: As shown in Table 3.3.3-1.

ACTION:

a. With an ECCS actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more ECCS actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.3-1.

c. With either ADS trip system "1" or "2" inoperable, restore the inoperable trip system to OPERABLE status within:

   1. 7 days, provided that the HPCS and RCIC systems are OPERABLE, or
   2. 72 hours, provided either the HPCS or RCIC systems are inoperable.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to $\leq$ 100 psig within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each ECCS actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.3.1-1.

4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. The actuation system logic associated with each of the ECCS divisions shall be manually tested independent of the SELF TEST SYSTEM during alternate refueling outages such that all divisions and all trip functions are tested at least once every four fuel cycles.

4.3.3.3 The ECCS RESPONSE TIME of each ECCS trip function shown in Table 3.3.3-3 shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one channel per trip system 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 ECCS trip system.

TABLE 3.3.3-1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION	APPLICABLE OPERATIONAL CONDITIONS	ACTION
A. DIVISION I TRIP SYSTEM			
1. RHR-A (LPCI MODE) & LPCS SYSTEM			
a. Reactor Vessel Water Level - Low Low Low, Level 1	2[b][a][e]	1, 2, 3, 4*, 5*	30
b. Drywell Pressure - High	2[b][a][e]	1, 2, 3	30
c. Reactor Vessel Pressure-Low (LPCI and LPCS Injection Valve Permissive)	4[a][e]	1, 2, 3	32
		4*, 5*	33
d. LPCI Pump (A) Start Time Delay Logic Card	1[e]	1, 2, 3, 4*, 5*	32
e. LPCS Pump Discharge Flow - Low##	1[e]	1, 2, 3, 4*, 5*	40
f. LPCI Pump (A) Discharge Flow - Low##	1[e]	1, 2, 3, 4*, 5*	40
g. Manual Initiation	1[b]	1, 2, 3, 4*, 5*	35
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "1"# ADS LOGIC "A" AND "E"			
a. Reactor Vessel Water Level - Low Low Low, Level 1	2[a][e]	1, 2, 3	30
b. Drywell Pressure - High	2[a][e]	1, 2, 3	30
c. ADS Timer	1[e]	1, 2, 3	32
d. Reactor Vessel Water Level - Low, Level 3 (Permissive)	1[e]	1, 2, 3	30
e. LPCS Pump Discharge Pressure-High (Permissive)	2[a][e]	1, 2, 3	32
f. LPCI Pump (A) Discharge Pressure-High (Permissive)	2[a][e]	1, 2, 3	32
g. ADS Drywell Pressure Bypass Timer	2[e]	1, 2, 3	32
h. Manual Inhibit ADS Switch	1	1, 2, 3	35
i. Manual Initiation	2	1, 2, 3	35

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION	APPLICABLE OPERATIONAL CONDITIONS	ACTION
B. DIVISION II TRIP SYSTEM			
1. RHR B & C (LPCI MODE)			
a. Reactor Vessel Water Level - Low Low Low, Level 1	2[b][a][e]	1, 2, 3, 4*, 5*	30
b. Drywell Pressure - High	2[b][a][e]	1, 2, 3	30
c. Reactor Vessel Pressure-Low	4[a][e]	1, 2, 3	32
(LPCI Injection Valve Permissive)		4*, 5*	33
d. LPCI Pump (B) Start Time Delay Logic Card	1[e]	1, 2, 3, 4*, 5*	32
e. LPCI Pump (B) Discharge Flow - Low##	1[e]	1, 2, 3, 4*, 5*	40
f. LPCI Pump (C) Discharge Flow - Low##	1[e]	1, 2, 3, 4*, 5*	40
g. Manual Initiation	1[b]	1, 2, 3, 4*, 5*	35
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "2"# ADS LOGIC "B" AND "F"			
a. Reactor Vessel Water Level - Low Low Low, Level 1	2[a][e]	1, 2, 3	30
b. Drywell Pressure - High	2[a][e]	1, 2, 3	30
c. ADS Timer	1[e]	1, 2, 3	32
d. Reactor Vessel Water Level - Low, Level 3 (Permissive)	1[e]	1, 2, 3	30
e. LPCI Pump (B and C) Discharge Pressure - High (Permissive)	2/pump[a][e]	1, 2, 3	32
f. ADS Drywell Pressure Bypass Timer	2[e]	1, 2, 3	32
g. Manual Inhibit ADS Switch	1	1, 2, 3	35
h. Manual Initiation	2	1, 2, 3	35

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION	APPLICABLE OPERATIONAL CONDITIONS	ACTION
C. DIVISION III TRIP SYSTEM			
1. HPCS SYSTEM			
a. Reactor Vessel Water Level-Low, Low, Level 2	4(b)(a)(g)(e)	1, 2, 3, 4*, 5*	36
b. Drywell Pressure - High †	4(b)(a)(g)(e)	1, 2, 3	36
c. Reactor Vessel Water Level-High, Level 8	2(c)(g)	1, 2, 3, 4*, 5*	35
d. RCIC Storage Tank Level-Low	2(d)(a)	1, 2, 3, 4*, 5*	37
e. Suppression Pool Water Level-High##	2(d)(a)	1, 2, 3, 4*, 5*	37
f. HPCS Pump Discharge Pressure-High##	1	1, 2, 3, 4*, 5*	41
g. HPCS System Flow Rate-Low##	1	1, 2, 3, 4*, 5*	41
h. Manual Initiation †	1	1, 2, 3, 4*, 5*	35

D. LOSS OF POWER	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM OPERABLE CHANNELS	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)					
a. Divisions I & II	2/Division	2/Division	2/Division	1, 2, 3, 4**, 5**	38
b. Division III	4	2	4	1, 2, 3, 4**, 5**	38
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)					
a. Divisions I & II	2/Division	2/Division	2/Division	1, 2, 3, 4**, 5**	39
b. Division III ††	3	3	3	1, 2, 3, 4**, 5**	39

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TABLE NOTATIONS

(a) A channel may be placed in an inoperable status for up to 6 hours during periods of required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

(b) Also actuates the associated division diesel generator.

(c) Provides signal to close HPCS pump injection valve only.

(d) Provides signal to HPCS pump suction valves only.

(e) These channels are required in order to maintain automatic trip capability as identified in the associated ACTION statements.

(f) Deleted.

(g) One-half of these trip channels is associated with Nuclear Systems Protection System (NSPS) Division III; the other half is associated with NSPS Division IV.

* When the system is required to be OPERABLE per Specification 3.5.2 or 3.5.3.

** Required when ESF equipment is required to be OPERABLE.

\# Not required to be OPERABLE when reactor steam dome pressure is $\leq$ 100 psig.

\#\# These Trip Functions are not required for ECCS actuation.

† The HPCS initiation functions of the Drywell Pressure - High and Manual Initiation are not required to be OPERABLE with indicated reactor vessel water level on the wide range instrument greater than the Level-8 setpoint coincident with the reactor steam dome pressure less than 600 psig.

†† One relay with three inputs in 3 out of 3 logic.

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirements, verify within one hour that a sufficient number of channels remain OPERABLE or are in the tripped condition to maintain automatic actuation capability of either Division I or Division II ECCS and either ADS Trip System 1 or Trip System 2, and place the inoperable channel(s) in the tripped condition within 24 hours*. Otherwise, declare the associated system(s) inoperable.

ACTION 31 - Deleted.

ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, verify within one hour that a sufficient number of channels remain OPERABLE or are in the tripped condition to maintain automatic actuation capability of either Division I or Division II ECCS and either ADS Trip System 1 or Trip System 2, and restore the inoperable channel(s) to OPERABLE status within 24 hours. Otherwise, declare the associated ADS trip system(s) or ECCS inoperable.

ACTION 33 - With the number of OPERABLE channels less than the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel(s) in the tripped condition within 24 hours.

ACTION 34 - Deleted.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 24 hours or declare the associated ADS valve or ECCS inoperable.

ACTION 36 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, verify within one hour that a sufficient number of channels remain OPERABLE or are in the tripped condition to maintain automatic HPCS actuation capability, and place the inoperable channel(s) in the tripped condition within 24 hours*. Otherwise, declare the HPCS system inoperable.

ACTION 37 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, verify within one hour that the HPCS pump suction is either aligned or is capable of automatically realigning to the suppression pool, and place at least one inoperable channel in the tripped condition within 24 hours*. Otherwise, declare the HPCS system inoperable.

*The provisions of Specification 3.0.4 are not applicable.

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

ACTION 38 - With the number of OPERABLE channels less than the Total Number of Channels, declare the associated emergency diesel generator inoperable and take the ACTION required by Specifications 3.8.1.1 or 3.8.1.2, as appropriate.

ACTION 39 - With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel in the tripped condition within 1 hour*; operation may then continue until performance of the next required CHANNEL FUNCTIONAL TEST.

ACTION 40 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, verify within one hour that a sufficient number of channels remain OPERABLE or are in the tripped condition to maintain automatic actuation capability of either Division I or Division II ECCS, and restore the inoperable channel(s) to OPERABLE status within 7 days. Otherwise, declare the associated system(s) inoperable.

ACTION 41 - With the number of OPERABLE channels less that required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel(s) to OPERABLE status within 7 days. Otherwise, declare the HPCS system inoperable.

*The provisions of Specification 3.0.4 are not applicable.

TABLE 3.3.3-3

EMERGENCY CORE COOLING SYSTEM RESPONSE TIMES

ECCS	RESPONSE TIME (Seconds)
1. LOW PRESSURE CORE SPRAY SYSTEM	≤ 37
2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM	
a. Loops A, B and C	≤ 37
3. AUTOMATIC DEPRESSURIZATION SYSTEM	NA
4. HIGH PRESSURE CORE SPRAY SYSTEM	≤ 27
5. LOSS OF POWER	NA

TABLE 4.3.3.1-1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
A. DIVISION I TRIP SYSTEM				
1. RHR-A (LPCI MODE) AND LPCS SYSTEM				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R(a)	1, 2, 3, 4*, 5*
b. Drywell Pressure - High	S	Q	R(a)	1, 2, 3
c. Reactor Vessel Pressure-Low (LPCI and LPCS Injection Valve Permissive)	S	Q	R(a)	1, 2, 3, 4*, 5*
d. LPCI Pump A Start Time Delay Logic Card	NA	Q	R	1, 2, 3, 4*, 5*
e. LPCS Pump Discharge Flow-Low	S	Q	R(a)	1, 2, 3, 4*, 5*
f. LPCI Pump (A) Discharge Flow -Low	S	Q	R(a)	1, 2, 3, 4*, 5*
g. Manual Initiation	NA	R	NA	1, 2, 3, 4*, 5*
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "1"# ADS LOGIC "A" AND "E"				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R(a)	1, 2, 3
b. Drywell Pressure-High	S	Q	R(a)	1, 2, 3
c. ADS Timer	NA	Q	R	1, 2, 3
d. Reactor Vessel Water Level - Low, Level 3	S	Q	R(a)	1, 2, 3
e. LPCS Pump Discharge Pressure-High	S	Q	R(a)	1, 2, 3
f. LPCI Pump A Discharge Pressure-High	S	Q	R(a)	1, 2, 3
g. ADS Drywell Pressure Bypass Timer	NA	Q	R	1, 2, 3
h. Manual Inhibit ADS Switch	NA	Q	NA	1, 2, 3
i. Manual Initiation	NA	R	NA	1, 2, 3

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
B. DIVISION II TRIP SYSTEM				
1. RHR B AND C (LPCI MODE)				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R(a)	1, 2, 3, 4*, 5*
b. Drywell Pressure - High	S	Q	R(a)	1, 2, 3
c. Reactor Vessel Pressure-Low (LPCI Injection Valve Permissive)	S	Q	R(a)	1, 2, 3, 4*, 5*
d. LPCI Pump B Start Time Delay Logic Card	NA	Q	R	1, 2, 3, 4*, 5*
e. LPCI Pump (B) Discharge Flow -Low	S	Q	R(a)	1, 2, 3, 4*, 5*
f. LPCI Pump (c) Discharge Flow -Low	S	Q	R(a)	1, 2, 3, 4*, 5*
g. Manual Initiation	NA	R	NA	1, 2, 3, 4*, 5*
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "2"# ADS LOGIC "B" AND "F"				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R(a)	1, 2, 3
b. Drywell Pressure-High	S	Q	R(a)	1, 2, 3
c. ADS Timer	NA	Q	R	1, 2, 3
d. Reactor Vessel Water Level - Low, Level 3	S	Q	R(a)	1, 2, 3
e. LPCI Pump (B and C) Discharge Pressure-High	S	Q	R(a)	1, 2, 3
f. ADS Drywell Pressure Bypass Timer	NA	Q	R	1, 2, 3
g. Manual Inhibit ADS Switch	NA	Q	NA	1, 2, 3
h. Manual Initiation	NA	R	NA	1, 2, 3

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
C. DIVISION III TRIP SYSTEM				
1. HPCS SYSTEM				
a. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R(a)	1, 2, 3, 4*, 5*
b. Drywell Pressure-High	S	Q	R(a)	1, 2, 3
c. Reactor Vessel Water Level-High, Level 8	S	Q	R(a)	1, 2, 3, 4*, 5*
d. RCIC Storage Tank Level - Low	S	Q	R(a)	1, 2, 3, 4*, 5*
e. Suppression Pool Water Level - High	S	Q	R(a)	1, 2, 3, 4*, 5*
f. HPCS Pump Discharge Pressure -High	S	Q	R(a)	1, 2, 3, 4*, 5*
g. HPCS System Flow Rate-Low	S	Q	R(a)	1, 2, 3, 4*, 5*
h. Manual Initiation	NA	R	NA	1, 2, 3, 4*, 5*
D. LOSS OF POWER				
1. 4.16 kV Emergency Bus Under-voltage (Loss of Voltage)	NA	NA	R	1, 2, 3, 4**, 5**
2. 4.16 kV Emergency Bus Under-voltage (Degraded Voltage)	S	M	R	1, 2, 3, 4**, 5**

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

Not required to be OPERABLE when reactor steam dome pressure is ≤ 100 psig.

* When the system is required to be OPERABLE per Specification 3.5.2.

** Required when ESF equipment is required to be OPERABLE.

(a) Calibrate the analog trip module at least once per 92 days.

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.4.1 The anticipated transient without scram recirculation pump trip (ATWS-RPT) system instrumentation channels shown in Table 3.3.4.1-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.1-2.

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

a. With an ATWS-RPT system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.4.1-2, declare the channel inoperable until the channel is restored to OPERABLE status with the channel trip setpoint adjusted consistent with the Trip Setpoint value.

b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system, place the inoperable channel(s) in the tripped condition within 72 hours or be in at least STARTUP within the next 6 hours.

c. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems, place at least one inoperable channel in the tripped condition within one hour, and place the second inoperable channel in the tripped condition within 72 hours. Otherwise, be in at least STARTUP within the next 6 hours.

d. With both trip systems otherwise inoperable, restore at least one trip system to OPERABLE status within one hour or be in at least STARTUP within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.3.4.1.1 Each ATWS-RPT system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.4.1-1.

4.3.4.1.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

TABLE 3.3.4.1-1

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM [a]
1. Reactor Vessel Water Level - Low Low, Level 2	2
2. Reactor Vessel Pressure - High	2

(a) One trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided the redundant trip system is OPERABLE.

TABLE 3.3.4.1-2

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
1. Reactor Vessel, Water Level - Low Low, Level 2	≥ -45.5 in.*	≥ -50.0 in.
2. Reactor Vessel Pressure - High	≤ 1127 psig	≤ 1150 psig

*See Bases Figure B3/4 3-1.

TABLE 4.3.4.1-1

ATWS RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
1. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R*
2. Reactor Vessel Pressure - High	S	Q	R*

*Calibrate trip unit at least once per 92 days.

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.4.2 The end-of-cycle recirculation pump trip (EOC-RPT) system instrumentation channels shown in Table 3.3.4.2-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.2-2 and with the END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME as shown in Table 3.3.4.2-3.

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is ≥ to 40% of RATED THERMAL POWER.

ACTION:

a. With an end-of-cycle recirculation pump trip function instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.4.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with the channel setpoint adjusted consistent with the Trip Setpoint value.

b. With one of the four channels required for any Trip Function inoperable, operation may continue provided the inoperable channel is placed in the tripped condition within 48 hours. The provisions of Specification 3.0.4 are not applicable.

c. With two of the four channels required for any Trip Function inoperable, place one channel in the tripped condition within six hours provided no tripped channel for that Trip Function already exists. The provisions of Specification 3.0.4 are not applicable.

d. With three of the four channels required for any Trip Function inoperable, reduce THERMAL POWER to less than 40% of RATED THERMAL POWER within 6 hours.

SURVEILLANCE REQUIREMENTS

4.3.4.2.1 Each end-of-cycle recirculation pump trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.4.2-1.

4.3.4.2.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. Divisional logic and portions of the channel coincident logic shall be manually tested independent of the SELF TEST SYSTEM during each refueling outage such that all trip functions are tested at least once every four fuel cycles.

SURVEILLANCE REQUIREMENTS (Continued)

4.3.4.2.3 The END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME of each trip function shown in Table 3.3.4.2-3 shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least the logic of one type of channel input, turbine control valve fast closure or turbine stop valve closure, such that both types of channel inputs are tested at least once per 36 months.

TABLE 3.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION [a]
1. Turbine Stop Valve - Closure	4[b]
2. Turbine Control Valve-Fast Closure	4[b]

(a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance provided at least two OPERABLE channels are monitoring that parameter.

(b) This function shall be automatically bypassed when turbine first stage pressure is less than the value of turbine first stage pressure corresponding to 40% of RATED THERMAL POWER.

TABLE 4.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
1. Turbine Stop Valve-Closure	Q	R
2. Turbine Control Valve-Fast Closure	Q	R

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.5 The reactor core isolation cooling (RCIC) system actuation instrumentation channels shown in Table 3.3.5-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3 with reactor steam dome pressure greater than 150 psig.

ACTION:

a. With an RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.5-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more RCIC system actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.5-1.

SURVEILLANCE REQUIREMENTS

4.3.5.1 Each RCIC system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.5.1-1.

4.3.5.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. All RCIC actuation system logic shall be manually tested independent of the SELF TEST SYSTEM such that all trip functions are tested at least once every four fuel cycles.

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTIONAL UNITS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM	ACTION
a. Reactor Vessel Water Level - Low Low, Level 2	2(b)(a)	50
b. Reactor Vessel Water Level - High, Level 8	2(c)	51
c. RCIC Storage Tank Water Level - Low	2(d)(a)	52
d. Suppression Pool Water Level - High	2(d)(a)	52
e. Manual Initiation	1(e)	53

TABLE 3.3.5-1 (Continued)

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

TABLE NOTATIONS

(a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

(b) Two trip systems with two channels per trip system.

(c) One trip system with two-out-of-two logic.

(d) One trip system with one-out-of-two logic.

(e) One trip system with one channel.

ACTION

ACTION 50 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, verify within one hour that a sufficient number of low reactor vessel water level channels remain OPERABLE or are in the tripped condition to maintain automatic RCIC system actuation capability, and place the inoperable channel(s) in the tripped condition within 24 hours. Otherwise, declare the RCIC system inoperable.

ACTION 51 - With the number of OPERABLE channels less than required by the Minimum OPERABLE channels per Trip System requirement, declare the RCIC system inoperable within 24 hours.

ACTION 52 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, verify within one hour that the RCIC pump suction is aligned or will automatically realign to the suppression pool, and place at least one inoperable channel in the tripped condition within 24 hours. Otherwise, declare the RCIC system inoperable.

ACTION 53 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within 24 hours or declare the RCIC system inoperable.

TABLE 3.3.5-2

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

FUNCTIONAL UNITS	TRIP SETPOINT	ALLOWABLE VALUE
a. Reactor Vessel Water Level - Low Low, Level 2	≥ -45.5 in.*	≥ -47.7 in.
b. Reactor Vessel Water Level - High, Level 8	≤ 52.0 in.*	≤ 52.6 in.
c. RCIC Storage Tank Level - Low	≥ 3½ in.**	≥ 0 in.**
d. Suppression Pool Water Level - High	≤ -8½ in.†	≤ -3 in.†
e. Manual Initiation	NA	NA

* See Bases Figure B 3/4 3-1.

** Instrument zero is 739' 10-3/4" msl.

† Instrument zero is 732' 8" msl.

TABLE 4.3.5.1-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNITS	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
a. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R[a]
b. Reactor Vessel Water Level - High, Level 8	S	Q	R[a]
c. RCIC Storage Tank Level - Low	S	Q	R[a]
d. Suppression Pool Water Level - High	S	Q	R[a]
e. Manual Initiation	NA	R	NA

(a) Calibrate the analog trip module at least once per 92 days.

3/4.3.6 CONTROL ROD BLOCK INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.6 The control rod block instrumentation channels shown in Table 3.3.6-1 shall be OPERABLE, with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.6-2.

APPLICABILITY: As shown in Table 3.3.6-1.

ACTION:

a. With a control rod block instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.6-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, take the ACTION required by Table 3.3.6-1.

SURVEILLANCE REQUIREMENTS

4.3.6 Each of the above required control rod block trip systems and instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.6-1.

TABLE 3.3.6-1

CONTROL ROD BLOCK INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[e]	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. ROD PATTERN CONTROL SYSTEM			
a. Low Power Setpoint	2	1, 2	60
b. RWL High Power Setpoint	2	1	60
2. APRM			
a. Flow Biased Neutron Flux - Upscale	3	1	61
b. Inoperative	3	1, 2, 5	61
c. Downscale	3	1	61
d. Neutron Flux - Upscale, Startup	3	2, 5	61
3. SOURCE RANGE MONITORS			
a. Detector not full in[a]	3	2	61
b. Upscale[b]	2**	5	62
	3	2	61
c. Inoperative[b]	2**	5	62
	3	2	61
d. Downscale[c]	2**	5	62
	3	2	61
4. INTERMEDIATE RANGE MONITORS	2**	5	62
a. Detector not full in	6	2, 5	61
b. Upscale	6	2, 5	61
c. Inoperative	6	2, 5	61
d. Downscale[d]	6	2, 5	61
5. SCRAM DISCHARGE VOLUME			
a. Water Level-High	2	1, 2, 5*	64
6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW			
a. Upscale	3	1	64
7. REACTOR MODE SWITCH			
a. Shutdown Mode	2	3, 4	63
b. Refuel Mode	2	5	63

TABLE 3.3.6-1 (Continued)

CONTROL ROD BLOCK INSTRUMENTATION

TABLE NOTATIONS

* With more than one control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

** OPERABLE channels must be associated with SRMs required OPERABLE per Specification 3.9.2.

(a) This function shall be automatically bypassed if detector count rate is > 100 cps or the IRM channels are on range 3 or higher.

(b) This function shall be automatically bypassed when the associated IRM channels are on range 8 or higher.

(c) This function shall be automatically bypassed when the IRM channels are on range 3 or higher.

(d) This function shall be automatically bypassed when the IRM channels are on range 1.

(e) A channel may be placed in an inoperable status for up to 6 hours for required surveillance provided at least one other OPERABLE channel in the same trip function is monitoring that parameter.

ACTION

ACTION 60 - Declare the RPCS inoperable and take the ACTION required by Specification 3.1.4.2.

ACTION 61 - With the number of OPERABLE Channels:

a. One less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 7 days or place the inoperable channel in the tripped condition within the next hour.

b. Two or more less than required by the Minimum OPERABLE Channels per Trip Function requirement, place at least one inoperable channel in the tripped condition within 1 hour.

ACTION 62 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within 1 hour.

ACTION 63 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, initiate a rod block.

ACTION 64 - With the number of OPERABLE Channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, verify within one hour that a sufficient number of channels remain OPERABLE to initiate a rod block by the associated Trip Function, and place at least one inoperable channel in the tripped condition within 24 hours. Otherwise, initiate a rod block

TABLE 3.3.6-2

CONTROL ROD BLOCK INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
1. ROD PATTERN CONTROL SYSTEM		
a. Low Power Setpoint	(*)% of RATED THERMAL POWER	(*)% of RATED THERMAL POWER
b. RWL High Power Setpoint	(*)% of RATED THERMAL POWER	(*)% of RATED THERMAL POWER
2. APRM		
a. Flow Biased Neutron Flux - Upscale		
1) During two recirculation loop operation:		
a) Flow Biased	≤ 0.66W + 58%** with a maximum of	≤ 0.66W + 61%** with a maximum of
b) High Flow Clamped	≤ 108.0% of RATED THERMAL POWER	≤ 110.0% of RATED THERMAL POWER
2) During single recirculation loop operation:		
a) Flow Biased	≤ 0.66(W-ΔW) + 42%**	≤ 0.66(W-ΔW) + 45%**
b) High Flow Clamped	Not required OPERABLE	Not required OPERABLE
b. Inoperative	NA	NA
c. Downscale	≥ 5% of RATED THERMAL POWER	≥ 3% of RATED THERMAL POWER
d. Neutron Flux - Upscale Startup	≤ 12% of RATED THERMAL POWER	≤ 14% of RATED THERMAL POWER
3. SOURCE RANGE MONITORS		
a. Detector not full in	NA	NA
b. Upscale	≤ 1×10^5 cps	≤ 1.6×10^5 cps
c. Inoperative	NA	NA
d. Downscale	≥ 3 cps	≥ 1.8 cps
4. INTERMEDIATE RANGE MONITORS		
a. Detector not full in	NA	NA
b. Upscale	≤ 108/125 division of full scale	≤ 110/125 division of full scale
c. Inoperative	NA	NA
d. Downscale	≥ 5/125 division of full scale	≥ 3/125 division of full scale

TABLE 3.3.6-2 (Continued)

CONTROL ROD BLOCK INSTRUMENTATION SETPOINTS

TABLE NOTATIONS

* To be determined during startup test program. The actual setpoints are the corresponding values of the turbine first stage pressure for these power levels.

** The Average Power Range Monitor rod block function is varied as a function of recirculation loop flow (W). The trip setting of this function must be maintained in accordance with note (a) of Table 2.2.1-1.

\# Instrument zero is 758' 5" msl.

\#\# Instrument zero is 758' 4 1/2" msl.

TABLE 4.3.6-1

CONTROL ROD BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION[a]	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
1. ROD PATTERN CONTROL SYSTEM				
a. Low Power Setpoint	NA	S/U[b][e] D[c],Q[e]	R[f]	1, 2
b. RWL High Power Setpoint	NA	S/U[b][e] D[c],Q[e]	R[f]	1
2. APRM				
a. Flow Biased Neutron Flux - Upscale	NA	S/U[b],Q	SA	1
b. Inoperative	NA	S/U[b],Q	NA	1, 2, 5
c. Downscale	NA	S/U[b],Q	SA	1
d. Neutron Flux - Upscale, Startup	NA	S/U[b],Q	SA	2, 5
3. SOURCE RANGE MONITORS				
a. Detector not full in	NA	S/U[b],W	NA	2, 5
b. Upscale	NA	S/U[b],W	SA	2, 5
c. Inoperative	NA	S/U[b],W	NA	2, 5
d. Downscale	NA	S/U[b],W	SA	2, 5
4. INTERMEDIATE RANGE MONITORS				
a. Detector not full in	NA	S/U[b],W	NA	2, 5
b. Upscale	NA	S/U[b],W	SA	2, 5
c. Inoperative	NA	S/U[b],W	NA	2, 5
d. Downscale	NA	S/U[b],W	SA	2, 5
5. SCRAM DISCHARGE VOLUME				
a. Water Level-High	S	Q	R[f]	1, 2, 5*
6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW				
a. Upscale	NA	S/U[b],Q	SA	1
7. REACTOR MODE SWITCH				
a. Shutdown Mode	NA	R	NA	3, 4
b. Refuel Mode	NA	R	NA	5

TABLE 4.3.6-1 (Continued)

CONTROL ROD BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

(a) Neutron detectors may be excluded from CHANNEL CALIBRATION.

(b) Within 7 days prior to startup.

(c) Within one hour prior to control rod movement, unless performed within the previous 24 hours, and as each power range above the RPCS low power setpoint is entered for the first time during any 24 hour period during power increase or decrease.

(d) Deleted.

(e) Includes reactor manual control multiplexing system input.

(f) Calibrate the analog trip module at least once per 92 days.

* With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

3/4.3.7 MONITORING INSTRUMENTATION

RADIATION MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.7.1 The radiation monitoring instrumentation channels shown in Table 3.3.7.1-1 shall be OPERABLE, with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3.7.1-1.

ACTION:

a. With a radiation monitoring instrumentation channel alarm/trip setpoint exceeding the value shown in Table 3.3.7.1-1, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels inoperable, take the ACTION required by Table 3.3.7.1-1.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.1 Each of the above required radiation monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the conditions and at the frequencies shown in Table 4.3.7.1-1.

TABLE 3.3.7.1-1

RADIATION MONITORING INSTRUMENTATION

INSTRUMENTATION	MINIMUM CHANNELS OPERABLE	APPLICABLE CONDITIONS	ALARM/TRIP SETPOINT	ACTION
1. Main Control Room Air Intake Radiation Monitor	2/intake[a]	1, 2, 3, 5, and *	≤ 10 mR/hr	70
2. Area Monitors				
a. New Fuel Storage Vault	1	#	≤ 2.5 mR/hr**	71
b. Spent Fuel Storage Pool	1	##	≤ 2.5 mR/hr**	71
c. Control Room Direct Radiation Monitor	1	At all times	≤ 2.5 mR/hr**	71

TABLE 3.3.7.1-1 (Continued)

RADIATION MONITORING INSTRUMENTATION

TABLE NOTATIONS

* When irradiated fuel is being handled in the secondary containment.

** Alarm only.

\# With fuel in the new fuel storage vault.

\#\# With irradiated fuel in the spent fuel storage pool.

(a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

ACTION

ACTION 70 -

a. With one of the required monitors inoperable, place the inoperable channel in the tripped condition within 6 hours; restore the inoperable channel to OPERABLE status within 7 days, or, within the next 6 hours, initiate and maintain operation of the control room emergency filtration system in the high radiation mode of operation.

b. With both of the required monitors inoperable, initiate and maintain operation of the control room emergency filtration system in the high radiation mode of operation within 1 hour.

ACTION 71 - With the required monitor inoperable, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

TABLE 4.3.7.1-1

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENTATION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	APPLICABILITY
1. Main Control Room Air Intake Radiation Monitor	S	Q	R	1, 2, 3, 5, and *
2. Area Monitors				
a. New Fuel Storage Vault	S	M	R	#
b. Spent Fuel Storage Pool	S	M	R	##
c. Control Room Direct Radiation Monitor	S	M	R	At all times

TABLE 4.3.7.1-1 (Continued)

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATION

*When irradiated fuel is being handled in the secondary containment.

#With fuel in the new fuel storage vault.

##With irradiated fuel in the spent fuel storage pool.

3/4.3.9 PLANT SYSTEMS ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.9 The plant systems actuation instrumentation channels shown in Table 3.3.9-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.9-2.

APPLICABILITY: As shown in Table 3.3.9-1.

ACTION:

a. With a plant system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.9-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more plant systems actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.9-1.

PLANT SYSTEMS ACTUATION INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

4.3.9.1 Each plant system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.9.1-1.

4.3.9.2 LOGIC SYSTEM FUNCTIONAL TESTS shall be performed at least once per 18 months. Each trip system or division of the plant system actuation logic associated with the Nuclear System Protection System shall be manually tested independent of the SELF TEST SYSTEM during separate refueling outages such that all divisions and all trip functions are tested at least once every four fuel cycles.

TABLE 3.3.9-1

PLANT SYSTEMS ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER CONTAINMENT SPRAY LOOP	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. CONTAINMENT SPRAY SYSTEM			
a. Drywell Pressure-High	2*	1, 2, 3	52
b. Containment Pressure-High	2*	1, 2, 3	52
c. Reactor Vessel Water Level-Low Low Low, Level 1	2*	1, 2, 3	52
d. Timers			
(1) Loop A, Loop B (10 minutes)	1	1, 2, 3	53
(2) Loop B only (90 seconds)	1	1, 2, 3	53
e. Manual Initiation	1	1, 2, 3	53
	MINIMUM OPERABLE CHANNELS		
2. FEEDWATER SYSTEM/MAIN TURBINE TRIP SYSTEM			
a. Reactor Vessel Water Level-High, Level 8	3*	1	54
	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM		
3. SUPPRESSION POOL MAKEUP SYSTEM			
a. Drywell Pressure-High	2*	1, 2, 3	50
b. Reactor Vessel Water Level-Low Low Low, Level 1	2*	1, 2, 3	50
c. Suppression Pool Water Level-Low Low	2*	1, 2, 3	50
d. Suppression Pool Makeup Timer	1	1, 2, 3	51
e. SPMS Manual Initiation	2	1, 2, 3	51
f. SPMS Mode Switch Permissive	1	1, 2, 3	51

* A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the channel in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.

TABLE 3.3.9-1 (Continued)

PLANT SYSTEMS ACTUATION INSTRUMENTATION

ACTION

ACTION 50 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:

a. With one channel inoperable, place the inoperable channel in the tripped condition within 24 hours or declare the SPMS inoperable and take the ACTION of Specification 3.6.3.4.

b. With more than one channel inoperable, declare the SPMS inoperable and take the ACTION of Specification 3.6.3.4.

ACTION 51 - With the number of OPERABLE channels less than required by the Minimum OPERABLE channels per Trip System requirement, declare the SPMS system inoperable and take the ACTION of Specification 3.6.3.4.

ACTION 52 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per containment spray loop requirement:

a. With one channel inoperable, place the inoperable channel in the tripped condition within 24 hours or declare the associated loop inoperable and take the ACTION of Specification 3.6.3.2.

b. With more than one channel inoperable, declare the associated loop inoperable and take the ACTION of Specification 3.6.3.2.

ACTION 53 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per containment spray loop requirement, declare the associated loop inoperable and take the ACTION of Specification 3.6.3.2.

ACTION 54 - For the feedwater system/main turbine trip system:

a. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels requirement, restore the inoperable channel to OPERABLE status within 7 days or be in at least STARTUP within the next 6 hours.

b. With the number of OPERABLE channels two less than required by the Minimum OPERABLE Channels requirement, restore at least one of the inoperable channels to OPERABLE status within 72 hours or be in at least STARTUP within the next 6 hours.

TABLE 3.3.9-2

PLANT SYSTEMS ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
1. CONTAINMENT SPRAY SYSTEM		
a. Drywell Pressure-High	≤ 1.68 psig	≤ 1.88 psig
b. Containment Pressure-High	≤ 22.3 psia	≤ 22.4 psia
c. Reactor Vessel Water Level-Low Low Low, Level 1	≥-145.5 in.*	≥-147.7 in.
d. Timers		
1. Loop A, Loop B	10.17 min.	≥ 10.10 ≤ 10.23 min.
2. Loop B only	≤ 90 sec.	≤ 90.6 sec.
2. FEEDWATER SYSTEM/MAIN TURBINE TRIP SYSTEM		
a. Reactor Vessel Water Level-High, Level 8	≤ 52.0 in.*	≤ 52.6 in.
3. SUPPRESSION POOL MAKEUP SYSTEM		
a. Drywell Pressure-High	≤ 1.68 psig	≤ 1.88 psig
b. Reactor Vessel Water Level-Low Low Low, Level 1	≥ -145.5 in.*	≥ -147.7 in.
c. Suppression Pool Water Level-Low Low	≥ 37 9/16 in.**	≥ 29 in.**
d. Suppression Pool Makeup Timer	≤ 25 minutes	≤ 30 minutes
e. SPMS Manual Initiation	NA	NA
f. SPMS Mode Switch Permissive	NA	NA

*See Bases Figure B 3/4 3-1.
**Instrument zero is 727'-0" msl.

TABLE 4.3.9.1-1

PLANT SYSTEMS ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	OPERATIONAL CHANNEL CALIBRATION	CONDITIONS IN WHICH SURVEILLANCE REQUIRED
1. CONTAINMENT SPRAY SYSTEM				
a. Drywell Pressure-High	S	Q	R[a]	1, 2, 3
b. Containment Pressure-High	S	Q	R[a]	1, 2, 3
c. Reactor Vessel Water Level-Low Low Low, Level 1	S	Q	R[a]	1, 2, 3
d. Timers	NA	Q	R	1, 2, 3
e. Manual Initiation	NA	R	NA	1, 2, 3
2. FEEDWATER SYSTEM/MAIN TURBINE TRIP SYSTEM				
a. Reactor Vessel Water Level-High, Level 8	S	Q	R	1
3. SUPPRESSION POOL MAKEUP				
a. Drywell Pressure-High	S	Q	R[a]	1, 2, 3
b. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R[a]	1, 2, 3
c. Suppression Pool Water Level-Low Low	S	Q	R[b]	1, 2, 3
d. Suppression Pool Makeup Timer	NA	Q	Q	1, 2, 3
e. SPMS Manual Initiation	NA	R	NA	1, 2, 3
f. SPMS Mode Switch Permissive	NA	R	NA	1, 2, 3

(a)Calibrate the analog trip module at least once every 92 days.

(b)Calibrate the analog comparator unit at least once every 92 days.

3/4.4.2 SAFETY VALVES

SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.2.1 The safety valve function of at least six of the following valves and the relief valve function of at least five additional valves, other than those satisfying the safety valve function requirement, shall be OPERABLE with the specified lift settings; and the acoustic monitor for each OPERABLE valve shall be OPERABLE.*

Number of Valves	Function	Setpoint** (psig)
7	Safety	1165 ± 11.6 psi
5	Safety	1180 ± 11.8 psi
4	Safety	1190 ± 11.9 psi
1	Relief	1103 ± 15.0 psi
8	Relief	1113 ± 15.0 psi
7	Relief	1123 ± 15.0 psi

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With the safety and/or relief valve function of one or more of the above required safety/relief valves inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

b. With one or more safety/relief valves stuck open, provided that suppression pool average water temperature is less than 110°F, close the stuck open safety/relief valve(s); if suppression pool average water temperature is 110°F or greater, place the reactor mode switch in the Shutdown position.

c. With one or more safety/relief valve acoustic monitor(s) inoperable, restore the inoperable monitor(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

d. With either relief valve function pressure actuation trip system "A" or "B" inoperable, restore the inoperable trip system to OPERABLE status within 7 days; otherwise, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours.

---

* One relief valve pressure actuation channel and/or one acoustic monitor channel may be placed in an inoperable status for up to 6 hours for the purpose of performing surveillance testing in accordance with Specifications 4.4.2.1.1 and 4.4.2.1.2.

** The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures.

SURVEILLANCE REQUIREMENTS

4.4.2.1.1 The acoustic monitor for each safety/relief valve shall be demonstrated OPERABLE by performance of a:

a. CHANNEL FUNCTIONAL TEST at least once per 31 days, and a

b. CHANNEL CALIBRATION at least once per 18 months.*

4.4.2.1.2 The relief valve function pressure actuation instrumentation shall be demonstrated OPERABLE by performance of a:

a. CHANNEL FUNCTIONAL TEST, including calibration of the trip unit, at least once per 92 days.

b. CHANNEL CALIBRATION and LOGIC SYSTEM FUNCTIONAL TEST at least once per 18 months. Each of the two trip systems or divisions of the relief valve function actuation logic associated with the Nuclear System Protection System shall be manually tested independent of the SELF TEST SYSTEM during separate refueling outages such that both divisions and all channel trips are tested at least once every four fuel cycles.

*The provisions of Specification 4.0.4 are not applicable provided the surveillance is performed within 12 hours after reactor steam pressure is adequate to perform the test.

SAFETY/RELIEF VALVES LOW-LOW SET FUNCTION

LIMITING CONDITION FOR OPERATION

3.4.2.2 The low-low set function of the following reactor coolant system safety/relief valves shall be OPERABLE with the following settings*:

Valve No.	Low-Low Set Function Setpoint* (psig) ± 15 psi Open	Close
F051D	1033	926
F051C	1073	936
F047F	1113	946
F051B	1113	946
F051G	1113	946

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With the low-low set function of one of the above required reactor coolant system safety/relief valves inoperable, restore the inoperable low-low set function to OPERABLE status within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With the low-low set function of more than one of the above required reactor coolant system safety/relief valves inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

c. With either low-low set function pressure actuation trip system "A" or "B" inoperable, restore the inoperable trip system to OPERABLE status within 7 days; otherwise, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.4.2.2 The low-low set function pressure actuation instrumentation shall be demonstrated OPERABLE by performance of a:

a. CHANNEL FUNCTIONAL TEST, including calibration of the trip unit, at least once per 92 days.

b. CHANNEL CALIBRATION and LOGIC SYSTEM FUNCTIONAL TEST at least once per 18 months. Each of the two trip systems or divisions of the low-low set function actuation logic associated with the Nuclear System Protection System shall be manually tested independent of the SELF TEST SYSTEM during separate refueling outages such that both divisions and all channel trips are tested at least once every four fuel cycles.

*One channel may be placed in an inoperable status for up to 6 hours for the purpose of performing surveillance testing in accordance with Specification 4.4.2.2.
**The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 71 TO FACILITY OPERATING LICENSE NO. NPF-62

ILLINOIS POWER COMPANY, ET AL.

CLINTON POWER STATION, UNIT NO. 1

DOCKET NO. 50-461

1.0 INTRODUCTION

In a letter dated September 20, 1991, Illinois Power Company (IP), the licensee, proposed changes to the Technical Specifications (TS) for the Clinton Power Station (CPS). In response to questions from the staff, IP supplemented the proposed changes in letters dated August 17, 1992 and February 17, 1993. These supplements consisted of revisions/clarifications which did not change the staff's initial proposed no significant hazards consideration determination. The proposed TS changes incorporate reliability based improvements to instrumentation Action Statements and surveillance test intervals based on NRC approved Licensing Topical Reports (LTR) previously submitted by the Boiling Water Reactor Owners Group (BWROG), of which IP is a member. This safety evaluation verifies that the TS changes proposed by the licensee and their associated justifications are bounded by the analyses provided in the approved topical reports and that any plant-specific issues are adequately addressed.

2.0 EVALUATION

The licensee's proposal is divided into five separate packages: (1) Reactor Protection System (RPS); (2) Emergency Core Cooling System (ECCS); (3) Control Rod Block; (4) Containment and Reactor Vessel Isolation Control System (CRVIS); and (5) Other Technical Specification Instrumentation. The staff evaluation is divided in the same manner below.

Staff approval of plant-specific TS changes was conditional, as described in the individual LTRs, upon satisfactory resolution of plant-specific conditions as described below.

(1) Licensees must confirm the applicability of the generic analyses for the LTR to their facilities.

(2) Demonstrate, through the use of actual instrument drift information from the equipment vendor or from plant-specific data, that the drift characteristics for instrumentation used in the plant are bounded by the assumptions used in the LTR when the functional test interval is extended from weekly or monthly to quarterly.

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(3) Confirm that the differences between individual components of the RPS that perform the trip function installed in the facility are bounded by the generic analysis.

2.1 Reactor Protection System (RPS)

2.1.1 Introduction

On January 24, 1988, the staff forwarded to the BWROG its safety evaluation report (SER) on the review of the following General Electric (GE) Topical Reports: (1) NEDC-30844, "BWR Owners' Group Response to NRC Generic Letter (GL) 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events;" and, (2) NEDC-30851P, "Technical Specifications Improvement Analysis for BWR RPS." NEDC-30844 forwarded the BWROG's technical basis that current BWR RPS surveillance test intervals (STIs) meet the recommendations of GL 83-28, Item 4.5.3. NEDC-30851P utilized the base case results of NEDC-30844 and fault tree modeling to establish a basis for extending the current RPS STIs and allowed out-of-service times (AOT).

The staff's review of the above mentioned Topical Reports concluded that: (1) the failure data and methodology utilized to determine the initiating event frequency and RPS unavailability data were generally adequate for both the solid-state and relay designs; (2) the solid-state design is much less sensitive to the considerations raised in GL 83-28; (3) the extension of the AOT when two sensor channels are out-of-service from 1 hour to 6 hours is acceptable; and (4) the potential benefits associated with an increase in the STI for RPS instrumentation outweighs the very small increase in core melt frequency. In addition, the staff concluded that each licensee must address instrument drift and verify that the LTR is directly applicable to the CPS in their application.

The staff's SER on the above Topical Reports, dated January 24, 1988, is directly applicable to BWR plants with solid-state RPSs. CPS is the only BWR with a solid-state RPS; therefore, the staff's safety evaluation is currently applicable to this plant alone.

2.1.2 Technical Specifications

The licensee proposed the following changes to the RPS TS which have generally been reviewed and approved in the staff's SERs on Topical Reports NEDC-30844 and NEDC-30851P, and in a letter dated July 26, 1991:

2.1.2.1 Allowed Out-of-service Times

A. Technical Specification changes:

TS 3.3.1, Action a.2. - TS change increases the time to place one inoperable channel in the tripped condition from 1 hour to 6 hours when two of the four channels required for any trip function become inoperable.

Footnote to TS 3.3.1 - AOT for surveillance is increased from 2 hours to 6 hours.

B. Potential "loss-of-function" issue for the RPS:

The staff expressed a concern regarding the proposed generic model TS change (ACTION "a") to the BWROG in a letter dated July 26, 1991. The staff indicated in the subject letter that model ACTION "a" could potentially be read to mean that loss of RPS functional capability is permitted for the 12-hour AOT. After discussing this concern with the BWROG and GE, the BWROG and GE agreed that the assumptions of the NEDC-30851P-A analyses did not support the explicit language in the model TS and that new TS wording would be submitted for staff review; furthermore, the BWROG emphasized that operators would not willingly allow this condition to exist. The staff indicated in this letter that they would review individual license applications to ensure the explicit language originally proposed as the model was corrected to prevent this interpretation of the TS ACTION "a".

The licensee states in their analysis that the potential "loss-of-function" issue is not applicable to the solid-state RPS. The plants utilizing a relay type RPS have a one-out-of-two-taken-twice logic. With this type of logic, if both channels of two parameters monitored were to become inoperable, conditions could exist where a "loss-of-function" could occur. The CPS solid-state RPS logic is arranged in a two-out-of-four type logic scheme. With the proposed TS and the RPS logic scheme, CPS could not operate when <u>any</u> parameter is lost such that a "loss-of-function" could occur. Therefore, the licensee has determined that the potential "loss-of-function" issue is not applicable to the solid-state RPS at CPS. The staff agrees with the licensee's assertion.

The licensee's analysis indicates that NEDC-30851P-A and the staff's associated SER, dated January 24, 1988, directly correspond to the CPS solid-state RPS design. In addition, the licensee has adequately addressed the proposed TS concerns regarding the potential "loss-of-function" issue for the RPS. Based on the above, the staff finds the licensee's proposed TS change acceptable.

2.1.2.2 Surveillance Test Intervals

A. Technical Specification changes:

The CHANNEL FUNCTIONAL TEST interval specified in TS Table 4.3.1.1-1, "Reactor Protection System Instrumentation Surveillance Requirements," is increased from weekly (W) or monthly (M) to quarterly (Q) for the following FUNCTIONAL UNITS:

2.b. - Average Power Range Monitor (APRM) Flow-Biased Simulated Thermal Power - High (W to Q),

2.c. - APRM Neutron Flux - High (W to Q),
2.d. - APRM Inoperative (W to Q),
3. - Reactor Vessel Steam Dome Pressure - High (M to Q),
4. - Reactor Vessel Water Level - Low, Level 3 (M to Q),
5. - Reactor Vessel Water Level - High, Level 8 (M to Q),
6. - Main Steam Isolation Valve - Closure (M to Q),
7. - Main Steam Line Radiation - High (M to Q),
8. - Drywell Pressure - High (M to Q),
9.a. - Scram Discharge Volume Water Level - High Level Transmitter (M to Q),
10. - Turbine Stop Valve - Closure (M to Q),
11. - Turbine Control Valve Fast Closure Valve Trip System Oil Pressure - Low (M to Q),
13. - Manual Scram (M to Q)

Table 4.3.1.1.-1 Table Notation (g) - Analog trip module calibration periodicity increases from 31 days to 92 days.

B. Instrument Drift

The licensee indicated in its safety analysis that the currently approved RPS instrument setpoint calculations include the effects of instrument drift over surveillance intervals of 18 months for all instrument loops with the exception of the analog trip modules. To address the drift issue with the RPS analog trip modules, IP indicated that it reviewed the results of monthly calibration checks performed over a 1-year period. As a result of this review, IP concluded that the quarterly drift is within present tolerances to allow an increase in STI for the RPS analog trip modules from 31 days to 92 days. Records showing the actual setpoint calculations and supporting data should be retained on-site for possible future staff audit.

The licensee's analysis of actual surveillance data appears to bound both linear and non-linear drift. In addition, the licensee indicated that plant procedures require operators to perform a CHANNEL CHECK at least once per every 12 hours for instruments with redundant channels. Many instruments, including the RPS analog trip modules, have redundant channels; therefore, should drift begin to occur, the licensee has the capability to identify the problem early and take appropriate corrective action.

Based on the licensee's analysis of instrument drift, the verification of fault tree modeling data and LTR applicability, and the acceptability of the proposed changes, the staff concludes that sufficient analysis has been performed to support the proposed RPS STI increases indicated above.

2.1.2.3 Editorial Technical Specification Changes

An editorial change deleting footnote "**" associated with Surveillance Requirement 4.3.1.2 is acceptable because it was applicable until the first refueling outage which was completed on May 28, 1989.

2.2 Emergency Core Cooling System (ECCS)

2.2.1 Introduction

On July 23, 1987, the BWROG submitted LTR NEDC-30936P (Ref. 3), "BWR Owner's Group Technical Specification Improvement Methodology (with Demonstration for BWR ECCS Actuation Instrumentation) Part 2," for staff review. This Topical Report utilizes fault tree methodology similar to that described in section 2.1.1. above to estimate the impact of the proposed changes on the average water injection function failure frequency utilizing only the Loss of Offsite Power (LOSP).

In a letter to the BWROG dated December 9, 1988, the staff forwarded its SER on the GE Topical Report NEDC-30936P. The staff's review of the Topical Report focused on the acceptability of extending the STIs from 31 days to 92 days, the AOT for surveillance from 2 hours to 6 hours, and the AOT for repair from 1 hour to 24 hours. The staff approved the analytic methods and general conclusions of the LTR indicating that licensees must confirm the LTR applicability to the specific plant and address instrument drift.

2.2.2 Technical Specifications

The licensee proposed the following changes to the ECCS Actuation TS which have generally been reviewed and approved in the staff's SER dated December 9, 1988 on LTR NEDC-30936P:

2.2.2.1 Allowed Out-of-Service Times

A. Technical Specification Changes

The AOTs of TS Table 3.3.3-1, "Emergency Core Cooling System Actuation Instrumentation," Actions 30, 33, 36, 37, and 40 are being increased from 1 hour to 24 hours; and Action 32 is being identified as 24 hours. Action 35 is changed from 8 hours to 24 hours.

The surveillance AOT of footnote (a) to TS Table 3.3.3-1 is being increased from 2 hours to 6 hours.

Actions 30, 32, 36, 37, and 40 of TS Table 3.3.3-1 are revised to resolve "loss-of-function" issues.

Action 35 of TS Table 3.3.3-1 increases the time to restore an inoperable channel to OPERABLE status from 8 to 24 hours

Footnotes (e) and (f) of TS Table 3.3.3-1 are deleted and replaced by new footnote (e)

The licensee's analysis indicates that NEDC-30936-A and the staff's associated SER dated December 9, 1988, directly correspond to the CPS solid-state ECCS actuation instrumentation design; therefore, the LTR and staff's SER is directly applicable to CPS. Based on the above, the staff finds the licensee's proposed TS change acceptable.

2.2.2.2 Surveillance Test Intervals

A. Technical Specification Changes

The CHANNEL FUNCTIONAL TEST interval specified in TS Table 4.3.3.1-1, "Emergency Core Cooling System Actuation Instrumentation Surveillance Requirements," is increased from monthly (M) to quarterly (Q) for the following Trip Functions:

A.1.a - Division I Trip System, RHR-A (LPCI Mode) and LPCS System, Reactor Vessel Water Level - Low Low Low, Level 1,
A.1.b - Drywell Pressure - High,
A.1.c - Reactor Vessel Pressure - Low (LPCI and LPCS Injection Valve Permissive),
A.1.d - LPCI Pump A Start Time Delay Logic Card,
A.1.e - LPCS Pump Discharge Flow - Low,
A.1.f - LPCI Pump (A) Discharge Flow - Low,
A.2.a - Automatic Depressurization System Trip System "1," ADS Logic "A" and "E," Reactor Vessel Water Level - Low Low Low, Level 1,
A.2.b - Drywell Pressure - High,
A.2.c - ADS Timer,
A.2.d - Reactor Vessel Water Level - Low, Level 3,
A.2.e - LPCS Pump Discharge Pressure - High,
A.2.f - LPCI Pump Discharge Pressure - High,
A.2.g - ADS Drywell Pressure Bypass Timer,
A.2.h - Manual Inhibit ADS Switch,
B.1.a - Division II Trip System, RHR B and C (LPCI Mode), Reactor Vessel Water Level - Low Low Low, Level 1,
B.1.b - Drywell Pressure - High,
B.1.c - Reactor Vessel Pressure - Low (LPCI Injection Valve Permissive),
B.1.d - LPCI Pump B Start Time Delay Logic Card,
B.1.e - LPCI Pump (B) Discharge Flow - Low,
B.1.f - LPCI Pump (C) Discharge Flow - Low,
B.2.a - Automatic Depressurization System Trip System "2," ADS Logic "B" and "F," Reactor Vessel Water Level - Low Low Low, Level 1,
B.2.b - Drywell Pressure - High,
B.2.c - ADS Timer,
B.2.d - Reactor Vessel Water Level - Low, Level 3,
B.2.e - LPCI Pump (B and C) Discharge Pressure - High,
B.2.f - ADS Drywell Pressure Bypass Timer,
B.2.g - Manual Inhibit ADS Switch,
C.1.a - Division III Trip System, HPCS System, Reactor Vessel Water Level - Low Low, Level 2,
C.1.b - Drywell Pressure - High,
C.1.c - Reactor Vessel Water Level - High, Level 8,
C.1.d - RCIC Storage Tank Level - Low,

C.1.e - Suppression Pool Water Level - High,
C.1.f - HPCS Pump Discharge Pressure - High, and
C.1.g - HPCS System Flow Rate - Low

In addition, the analog trip module calibration interval specified by footnote (a) to TS Table 4.3.3.1-1 is increased from 31 days to 92 days.

B. Instrument Drift

The licensee indicated in its safety analysis that the current ECCS actuation instrumentation setpoint calculations include the effects of instrument drift over surveillance intervals of 18 months for all instrument loops with the exception of the analog trip modules. To address the drift issue with the ECCS actuation analog trip modules, IP indicated that it reviewed the results of monthly calibration checks performed over a 1-year period. As a result of this review, IP concluded that the quarterly drift is within present tolerances to allow an increase in STI for the ECCS actuation analog trip modules from 31 days to 92 days. Records showing the actual setpoint calculations and supporting data should be retained on-site for possible future staff audit.

The licensee's analysis of actual surveillance data appears to bound the potential for both linear and non-linear drift problems. In addition, the licensee indicated that plant procedures require operators to perform a CHANNEL CHECK at least once per every 12 hours for instruments with redundant channels. Many instruments, including the RPS analog trip modules, have redundant channels; therefore, should drift begin to occur, the licensee has the capability to identify the problem early and take appropriate corrective action.

Based on the licensee's analysis of instrument drift, the verification of fault tree modeling data and direct LTR applicability, and the acceptability of the proposed changes, the staff concludes that sufficient analysis has been performed to support the proposed RPS STI increases indicated above.

2.2.2.3 Editorial Technical Specification Changes

An editorial change deleting footnote "*" associated with Surveillance Requirement 4.3.3.2 is acceptable because it was applicable until the first refueling outage which was completed on May 28, 1989.

2.3 Control Rod Block System

2.3.1 Introduction

On June 23, 1986, the BWROG submitted LTR NEDC-30851P, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation," (Ref. 4) for NRC review. The LTR provides a basis for extending the STI for control rod block function (CRBF) instrumentation. The

CRBF shares common instrumentation with the RPS. To gain the full safety benefit of the proposed RPS instrumentation TS changes, a corresponding STI extension for the CRBF is necessary.

Unlike the analyses discussed in sections 2.1 and 2.2 above, no specific fault trees were developed for the CRBF instrumentation. Instead, the impact on the average control rod block failure rate was estimated based upon the results in NEDC-30851P-A (Ref. 1) (See section 2.1.) NEDC-30851P concluded that the benefits associated with the proposed changes to the RPS instrumentation TS offset any potential negative impact of extending the control rod block instrumentation surveillance intervals.

In a letter dated September 22, 1988, the staff forwarded its SER on NEDC-30851P, Supplement 1. The staff approved the analytic methods and general conclusions of the LTR indicating that licensees must confirm the LTR applicability to the specific plant and address instrument drift.

2.3.2 Technical Specifications

The licensee proposed the following changes to the CRBF instrumentation TS which have been reviewed and generically approved in the staff's SER dated September 22, 1988, on LTR NEDC-30851P, Supplement 1:

2.3.2.1 Allowed Out-of-Service Times

The surveillance AOT of footnote (e) to TS Table 3.3.6-1, "Control Rod Block Instrumentation," is being increased from 2 hours to 6 hours.

Action 64 to TS Table 3.3.6-1 is being added to permit "loss-of-function" for the scram discharge level "Water Level-High," and the reactor coolant system recirculation flow "Upscale."

The licensee's analysis indicates that NEDC-30851P-A, NEDC-30851P-A, Supplement 1, and the staff's associated SER dated September 22, 1988 directly correspond to the CPS solid-state RPS CRBF instrumentation design; therefore, the LTR and staff's SER is directly applicable to CPS. Based on the above, the staff finds the licensee's proposed TS change acceptable.

2.3.2.2 Surveillance Test Intervals

A. Technical Specification Changes

The CHANNEL FUNCTIONAL TEST interval specified in TS Table 4.3.6-1, "Control Rod Block Instrumentation Surveillance Requirements," is increased from monthly (M) to quarterly (Q) for the following Trip Functions:

1.a - Rod Pattern Control System, Low Power Setpoint,
1.b - Rod Pattern Control System, RWL High Power Setpoint,

2.a - APRM Flow Biased Neutron Flux - Upscale,
2.b - APRM Inoperative,
2.c - APRM Downscale,
2.d - APRM Neutron Flux - Upscale, Startup,
5.a - Scram Discharge Volume, Water Level - High, and
6.a - Reactor Coolant System Recirculation Flow, Upscale

In addition, the analog trip module calibration interval specified by footnote (f) to TS Table 4.3.6-1 is increased from 31 days to 92 days and note (d) is deleted to resolve conflicts with earlier submittals.

B. Instrument Drift

The licensee indicated in its safety analysis that the current RBCF instrumentation setpoint calculations include the effects of instrument drift over surveillance intervals of 18 months for all instrument loops with the exception of the analog trip modules. To address the drift issue with the RBCF instrumentation analog trip modules, IP indicated that it reviewed the results of monthly calibration checks performed over a 1-year period. As a result of this review, IP concluded that the quarterly drift is within present tolerances to allow an increase in STI for the RBCF instrumentation analog trip modules from 31 days to 92 days. Records showing the actual setpoint calculations and supporting data should be retained on-site for possible future staff audit.

The licensee's analysis of actual surveillance data appears to bound the potential
for both linear and non-linear drift problems. In addition, the licensee indicated that plant procedures require operators to perform a CHANNEL CHECK at least once per every 12 hours for instruments with redundant channels. Many instruments, including the RBCF instrumentation analog trip modules, have redundant channels, therefore, should drift begin to occur, the licensee has the capability to identify the problem early and take appropriate corrective action.

Based on the licensee's analysis of instrument drift, the verification of fault tree modeling data and direct LTR applicability, and the acceptability of the proposed changes, the staff concludes that sufficient analysis has been performed to support the proposed CRBF instrumentation STI increases indicated above.

2.4 Containment and Reactor Vessel Isolation Control System (CRVIS)

2.4.1 Introduction

On August 29, 1986, the BWROG submitted LTR NEDC-30851P, Supplement 2, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," for staff review. Additionally, on June 27, 1989, the BWROG submitted LTR NEDC-31677P,

"Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," for staff review. NEDC-30851P, Supplement 2 provides the basis for extending CRVIS instrumentation AOTs and STIs for isolation instrumentation common to both ECCS and RPS. NEDC-31677P provides the basis for extending CRVIS instrumentation AOTs and STIs for isolation instrumentation not common to RPS or ECCS.

In a letter to the BWROG dated January 6, 1989, the staff forwarded its SER regarding the review of NEDC-30851P, Supplement 2. The staff's evaluation concluded that NEDC-30851P, Supplement 2 provided an acceptable basis for extending STIs and AOTs associated with isolation instrumentation common to RPS and ECCS.

In a letter to the BWROG dated June 18, 1990, the staff forwarded its SER regarding the review of NEDC-31677P. The staff concluded in its evaluation that NEDC-31677P provided an acceptable basis for extending STIs and AOTs for isolation instrumentation not common to the RPS or ECCS.

2.4.2 Technical Specifications

The licensee proposed the following changes to the CRVIS instrumentation TS (TS 3/4.3.2) which have been reviewed and generically approved in the staff's SERs dated January 6, 1989 on LTR NEDC-30851P, Supplement 2, and June 18, 1990 on LTR NEDC-31677P:

2.4.2.1 Allowed Out-of-Service Times

A. Technical Specification Changes

The repair AOT of Action b.2 is increased from 1 hour to 6 hours.

The repair AOT of Action c.1 is increased from 1 hour to 24 hours. The repair AOT of footnote "**" associated with this Action is also increased from 2 hours to 6 hours.

The surveillance AOTs identified in footnote "*" to the Limiting Condition for Operation (LCO) and footnote (a) and (k) to TS Table 3.3.2-1, "CRVIS Instrumentation," are increased from 2 hours to 6 hours.

The licensee's analysis indicates that NEDC-30851P, Supplement 2, and NEDC-31677P in addition to the staff's associated SERs dated January 6, 1989, and June 18, 1990, directly correspond to the CPS solid-state RPS CRVIS instrumentation design; therefore the LTRs and staff's SERs are directly applicable to CPS. Based on this affirmation, the staff finds the licensee's proposed TS change acceptable.

2.4.2.2 Surveillance Test Intervals

A. Technical Specifications

The CHANNEL FUNCTIONAL TEST interval specified in TS Table 4.3.2.1-1, "CRVIS Instrumentation Surveillance Requirements," is increased from monthly (M) to quarterly (Q) for the following Trip Functions:

1.a - Primary and Secondary Containment Isolation, Reactor Vessel Water Level - Low Low, Level 2,
1.b - Reactor Vessel Water Level - Low Low, Level 2 (ECCS Div. I and II),
1.c - Reactor Vessel Water Level - Low Low, Level 2 (ECCS Div. III),
1.d - Drywell Pressure - High,
1.e - Drywell Pressure - High (ECCS Div. I and II),
1.f - Drywell Pressure - High (ECCS Div. III),
1.g - Containment Building Fuel Transfer Pool Ventilation Plenum Radiation - High,
1.h - Containment Building Exhaust Ventilation Radiation - High,
1.i - Containment Building Continuous Containment Purge (CCP) Exhaust Radiation - High,
1.j - Reactor Vessel Water Level - Low Low Low, Level 1,
1.k - Containment Pressure - High,
1.l - Main Steam Line Radiation - High,
1.m - Fuel Building Exhaust Radiation - High,
2.a - Main Steam Line Isolation, Reactor Vessel Water Level - Low Low Low, Level 1,
2.b - Main Steam Line Radiation - High,
2.c - Main Steam Line Pressure - Low,
2.d - Main Steam Line Flow - High,
2.e - Condenser Vacuum - Low,
2.f - Main Steam Line Tunnel Temp. - High,
2.g - Main Steam Line Tunnel Delta Temp. - High,
2.h - Main Steam Line Turbine Bldg. Temp. -High,
3.a - Reactor Water Cleanup System Isolation, Delta Flow - High,
3.b - Delta Flow Timer,
3.c.1 - Equipment Area Temp. - High, Pump Rooms A, B, C,
3.c.2 - Equipment Area Temp. - High, Heat Exchanger Rooms - East, West,
3.d.1 - Equipment Area Delta Temp. - High, Pump Rooms A, B, C,
3.d.2 - Equipment Area Delta Temp. - High, Heat Exchanger Rooms - East, West,
3.e - Reactor Vessel Water Level - Low Low, Level 2,
3.f - Main Steam Line Tunnel Ambient Temp. - High,
3.g - Main Steam Line Tunnel Delta Temp. - High,
3.h - SLCS Initiation,
4.a - Reactor Core Isolation Cooling System Isolation, RCIC Steam Line Flow - High,
4.b - RCIC Steam Line Flow - High Timer,
4.c - RCIC Steam Supply Pressure - Low,
4.d - RCIC Turbine Exhaust Diaphragm Pressure - High,
4.e - RCIC Equipment Room Ambient Temperature - High,
4.f - RCIC Equipment Room Delta Temperature - High,

4.g - Main Steam Line Tunnel Ambient Temp. - High,
4.h - Main Steam Line Tunnel Delta Temp. - High,
4.i - Main Steam Line Tunnel Temp. Timer,
4.j - Drywell Pressure,
4.l - RHR/RCIC Steam Line Flow - High,
4.m - RHR Heat Exchanger A, B Ambient Temperature - High,
4.n - RHR Heat Exchanger A, B Delta Temp. - High,
5.a - RHR System Isolation, RHR Heat Exchanger Rooms A, B Ambient Temp. - High,
5.b - RHR Heat Exchanger Rooms A, B Delta Temp. - High,
5.c - Reactor Vessel Water Level - Low, Level 3,
5.d - Reactor Vessel Water Level - Low Low Low, Level 1,
5.e - Reactor Vessel (RHR Cut-in Permissive) Pressure - High,
5.f.1 - Drywell Pressure - High, RHR Test Line, and
5.f.2 - Drywell Pressure - High, Fuel Pool Cooling

The staggered test interval specified by footnote (a) to TS Table 4.3.2.1-1 is increased from 31 days to 92 days.

The analog trip module calibration interval specified by footnote (b) to TS Table 4.3.2.1-1 is increased from 31 days to 92 days.

B. Instrument Drift

The licensee indicated in its safety analysis that the current CRVIS instrumentation setpoint calculations include the effects of instrument drift over surveillance intervals of 18 months for all instrument loops with the exception of the analog trip modules. To address the drift issue with the CRVIS instrumentation analog trip modules, IP indicated that it reviewed the results of monthly calibration checks performed over a 1-year period. As a result of this review, IP concluded that the quarterly drift is within present tolerances to allow an increase in STI for the CRVIS instrumentation analog trip modules from 31 days to 92 days. Records showing the actual setpoint calculations and supporting data should be retained on-site for possible future staff audit.

The licensee's analysis of actual surveillance data appears to bound the potential for both linear and non-linear drift problems. In addition, the licensee indicated that plant procedures require operators to perform a CHANNEL CHECK at least once every 12 hours for instruments with redundant channels. Many instruments, including some of the CRVIS instrumentation analog trip modules, have redundant channels, therefore, should drift begin to occur, the licensee has the capability to identify the problem early and take appropriate corrective action.

2.1.2.3 Editorial Technical Specification Changes

An editorial change deleting footnote "**" associated with Surveillance Requirement 4.3.2.2 is acceptable because it was applicable until the first refueling outage which was completed on May 28, 1989.

2.5 Other Technical Specification Instrumentation

On February 19, 1991 the BWROG submitted LTR GENE-770-06-1, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," for staff review. The staff forwarded its SER in a letter to the BWROG dated September 13, 1991

By letter dated July 21, 1992, the staff forwarded its SER regarding GENE-770-06-2 to the BWROG. The staff's SER concluded that GENE-770-06-2 provided sufficient basis to generically extend the AOTs and STIs for selected instrumentation described below.

2.5.1 Technical Specifications

The licensee proposed the changes to the following instrumentation TS which have been reviewed and generically approved in the staff's SERs dated September 13, 1991, and July 21, 1992, for LTR GENE-770-06-2 and LTR GENE-770-06-1, respectively:

1. TS 3/4.3.4.1, "ATWS Recirculation Pump Trip System Instrumentation"

   a. The surveillance AOT of footnote (a) to TS Table 3.3.4.1-1, "ATWS Recirculation Pump Trip System Instrumentation," is increased from 2 hours to 6 hours.

   b. The CHANNEL FUNCTIONAL TEST interval specified in TS Table 4.3.4.1-1, "ATWS Recirculation Pump Trip Actuation Instrumentation Surveillance Requirements," is increased from monthly (M) to quarterly (Q) for the following Trip Functions:

      1 - Reactor Vessel Water Level - Low Low, Level 2, and
      2 - Reactor Vessel Pressure - High

   c. The trip unit calibration interval specified by footnote "*" to TS Table 4.3.4.1-1 is being increased from 31 days to 92 days.

2. TS 3/4.3.4.2, "End-of-Cycle Recirculation Pump Trip System Instrumentation"

   a. The repair AOT of Action c is increased from 1 hour to 6 hours.

   b. The surveillance AOT of footnote (a) to TS Table 3.3.4.2-1, "End-of-Cycle Recirculation Pump Trip System Surveillance Requirements," is increased from 2 hours to 6 hours.

c. The CHANNEL FUNCTIONAL TEST interval specified in TS Table 4.3.4.2-1, "End-of-Cycle Recirculation Pump Trip System Surveillance Requirements," is increased from monthly (M) to quarterly (Q) for the following Trip Functions:

1 - Turbine Stop Valve - Closure, and
2 - Turbine Control Valve - Fast Closure

d. An editorial change deletes the "Total Number of Channels" and the "Channels to Trip" columns of TS Table 3.3.4.2-1 and revises the Minimum OPERABLE Channels per Trip Function requirements from "3" to "4." Since this logic is arranged in a two-out-of-four scheme and the Action Statements address channel inoperability based on four channels, this proposed change is being made to make Table 3.3.4.2-1 match the current Action Statements. This change does not reduce the number of channels required to be OPERABLE.

e. An editorial change deleting footnote "*" associated with Surveillance Requirement 4.3.4.2.2 is acceptable because it was applicable only until the completion of the first refueling outage which was complete on May 28, 1989.

3. TS 3/4.3.5, "Reactor Core Isolation Cooling System Actuation Instrumentation"

a. The repair AOTs of TS Table 3.3.5-1, "Reactor Core Isolation Cooling System Actuation Instrumentation," Actions 50.a and 52 are increased from 8 hours to 24 hours; and Action 51 is identified as 24 hours and Action 53 is increased from 8 hours to 24 hours.

b. The surveillance AOT of footnote (a) to TS Table 3.3.5-1 is increased from 2 hours to 6 hours.

c. The CHANNEL FUNCTIONAL TEST interval specified in TS Table 4.3.5.1-1, "Reactor Core Cooling Actuation Instrumentation Surveillance Requirements," is increased from monthly (M) to quarterly (Q) for the following Functional Units:

1 - Reactor Vessel Water Level - Low Low, Level 2,
2 - Reactor Vessel Water Level - High, Level 8,
3 - RCIC Storage Tank Level - Low, and
4 - Suppression Pool Water Level - High

d. The analog trip module calibration interval specified by footnote (a) to TS Table 4.3.5.1-1 is increased from 31 days to 92 days.

e. Actions 50 and 52 of TS Table 3.3.5-1 have been revised to address "loss-of-function."

f. An editorial change deletes footnote "*" associated with Surveillance Requirement 4.3.5.2 since this footnote was only applicable until the first refueling outage which was completed on May 28, 1989.

4. TS 3/4.3.6, "Control Rod Block Instrumentation"

a. Action 64 is added to TS Table 3.3.6-1, "Control Rod Block Instrumentation," to allow control rod block instrumentation channels to be inoperable for up to 24 hours rather than 1 hour per existing Action 62. The reference to Action 62 on Table 3.3.6-1 is being replaced with a reference to Action 64 for the following Trip Functions:

5.a - Scram Discharge Volume, Water Level - High, and
6.a - Reactor Coolant System Recirculation Flow, Upscale.

5. TS 3/4.3.7.1, "Radiation Monitoring Instrumentation"

a. The repair AOT of TS Table 3.3.7.1-1, "Radiation Monitoring Instrumentation," Action 70.a is increased from 1 hour to 6 hours.

6. TS 3/4.3.9, "Plant Systems Actuation Instrumentation"

a. Action Statement "b" has been deleted and replaced with new Action Statements 52 and 53 for Table 3.3.9-9, "Plant Systems Actuation Instrumentation." The proposed Action 52 is based on the number of channels affected instead of the number of loops affected. Proposed Action 53 applies to those trip functions with only one channel per containment spray loop. A repair AOT extension to 24 hours is also applicable in those instances where taking out the channel does not cause a loss of trip function.

Additionally, Action 50 is revised to address the number of channels affected and to remove the option of placing the trip system in the tripped condition to satisfy the action requirement. Action 50 is also revised to be applicable to the Suppression Pool Water Level-Low-Low Trip function, Table 3.3.9-1 function 3.c. An AOT extension to 24 hours has been added for those situations where taking out the channel does not cause a loss of trip function.

Action Statement "c" is relocated to Table 3.3.9-1 as new Action 54.

Action Statement "d" is replaced with new Action Statement "b" which directs the action to be taken as required by Table 3.3.9-1.

b. The surveillance AOT of footnote "*" to TS Table 3.3.9-1 is increased from 2 hours to 6 hours. The reference to "Trip System" is replaced with the term "Channel" to reflect the revised Action Statement terminology.

c. The CHANNEL FUNCTIONAL TEST interval specified in TS Table 4.3.9.1-1, "Plant Systems Actuation Instrumentation Surveillance Requirements," is increased from monthly (M) to quarterly (Q) for the following Trip Functions:

1.a - Containment Spray System, Drywell Pressure - High,
1.b - Containment Pressure - High,
1.c - Reactor Vessel Water Level - Low Low Low, Level 1,
1.d - Timers,
2.a - Feedwater System/Main Turbine Trip System, Reactor Vessel Water Level - High, Level 8,
3.a - Suppression Pool Makeup, Drywell Pressure - High,
3.b - Reactor Vessel Water Level - Low Low Low, Level 1,
3.c - Suppression Pool Water Level - Low Low, and
3.d - Suppression Pool Makeup Timer.

d. The analog trip module calibration interval specified by footnote (a) to TS Table 4.3.9.1-1 is increased from 31 days to 92 days.

e. The analog comparator unit calibration interval specified by footnote (b) to TS Table 4.3.9.1-1 is increased from 31 days to 92 days.

f. An editorial change to correct the spelling of the word "comparator" in footnote (b) to TS Table 4.3.9.1-1.

g. An editorial change to Action a to make it consistent with the wording utilized in similar Action Statements of other TSs.

h. An editorial change to delete footnote "*" associated with Surveillance Requirement 4.3.9.2 since this footnote was only applicable until the first refueling outage which was completed on May 28, 1989.

7. TS 3/4.4.2.1, "Safety/Relief Valves"

a. The surveillance AOT of footnote "*" is increased from 2 hours to 6 hours.

b. The CHANNEL FUNCTIONAL TEST interval of Surveillance Requirement 4.4.2.1.2.a is increased from 31 days to 92 days.

c. An editorial change to delete footnote "**" associated with Surveillance Requirement 4.4.2.1.2.b since this footnote was only applicable until the first refueling outage which was complete on May 28, 1989.

8. TS 3/4.4.2.2, "Safety/Relief Valves Low-Low Set Function"

a. The surveillance AOT of footnote "*" is increased from 2 hours to 6 hours.

b. The CHANNEL FUNCTIONAL TEST interval of Surveillance Requirement 4.4.2.2.a is increased from 31 days to 92 days.

c. An editorial change to delete footnote "+" associated with Surveillance Requirement 4.4.2.2.b since this footnote was only applicable until the first refueling outage which was complete on May 28, 1989.

2.5.2 Instrument Drift

The licensee indicated in its safety analysis that the current instrumentation setpoint calculations include the effects of instrument drift over surveillance intervals of 18 months for all instrument loops with the exception of the analog trip modules. To address the drift issue with other instrumentation analog trip modules, IP indicated that it reviewed the results of monthly calibration checks performed over a 1-year period. As a result of this review, IP concluded that the quarterly drift is within present tolerances to allow an increase in STI for the instrumentation analog trip modules as indicated in the above changes. Records showing the actual setpoint calculations and supporting data should be retained on-site for possible future staff audit.

The licensee's analysis of actual surveillance data appears to bound the potential for both linear and non-linear drift problems. In addition, the licensee indicated that plant procedures require operators to perform a CHANNEL CHECK at least once per every 12 hours for instruments with redundant channels. Many instruments, including some of the instrumentation analog trip modules, have redundant channels; therefore, should drift begin to occur, the licensee has the capability to identify the problem early and take appropriate corrective action.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

This amendment changes requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (56 FR 66921). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

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

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