August 2, 1995

Mr. D. L. Farrar
Manager, Nuclear Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. M91124 AND M91125)

Dear Mr. Farrar:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 104 to Facility Operating License No. NPF-11 and Amendment No. 90 to Facility Operating License No. NPF-18 for the LaSalle County Station, Units 1 and 2, respectively. The amendments are in response to your application dated December 14, 1994.

The amendments revise the surveillance test intervals and allowed outage times for certain actuation instrumentation in the reactor protection, isolation, emergency core cooling, control rod withdrawal block, monitoring and feedwater/main turbine trip systems. The amendments also include changes to the feedwater/main turbine trip limiting condition for operation required actions, several mode related changes to the nuclear instrumentation and rod block specifications, shiftly channel check requirements for several systems, and several editorial changes to correct errors and remove outdated footnotes.

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

Sincerely,
Original signed by:
William D. Reckley, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosures: 1. Amendment No. 104 to NPF-11
2. Amendment No. 90 to NPF-18
3. Safety Evaluation

cc w/encl: see next page

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D. L. Farrar
Commonwealth Edison Company

LaSalle County Station
Unit Nos. 1 and 2

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-373

LASALLE COUNTY STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 104
License No. NPF-11

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

   A. The application for amendment filed by the Commonwealth Edison Company (the licensee), dated December 14, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 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 set forth in 10 CFR Chapter I;

   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 enclosure to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-11 is hereby amended to read as follows:

9508090115 950802
PDR ADOCK 05000373
P PDR

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 104 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective upon the date of issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION

William D. Reckley

William D. Reckley, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 2, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 104

FACILITY OPERATING LICENSE NO. NPF-11

DOCKET NO. 50-373

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain a vertical line indicating the area of change. Pages indicated by an asterisk are provided for convenience only.

REMOVE	INSERT
XII	XII
XIII	XIII
B 2-9	B 2-9
3/4 3-1	3/4 3-1
3/4 3-2*	3/4 3-2*
3/4 3-5	3/4 3-5
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3/4 3-27	3/4 3-27
3/4 3-27(a)	3/4 3-27(a)
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2.2.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

The Reactor Protection System instrumentation setpoints specified in Table 2.2.1-1 are the values at which the reactor trips are set for each parameter. The Trip Setpoints have been selected to ensure that the reactor core and reactor coolant system are prevented from exceeding their Safety Limits during normal operation and design basis anticipated operational occurrences and to assist in mitigating the consequences of accidents. Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

1. Intermediate Range Monitor, Neutron Flux - High

The IRM system consists of 8 chambers, 4 in each of the reactor trip systems. The IRM is a 5 decade 10 range instrument. The trip setpoint of 120 divisions of scale is active in each of the 10 ranges. Thus as the IRM is ranged up to accommodate the increase in power level, the trip setpoint is also ranged up. The IRM instruments provide for overlap with both the APRM and SRM systems.

The most significant source of reactivity changes during the power increase is due to control rod withdrawal. In order to ensure that the IRM provides the required protection, a range of rod withdrawal accidents have been analyzed. The results of these analyses are in Section 15.4.1.2 of the FSAR. The most severe case involves an initial condition in which THERMAL POWER is at approximately 1% of RATED THERMAL POWER. Additional conservatism was taken in this analysis by assuming the IRM channel closest to the control rod being withdrawn is bypassed. The results of this analysis show that the reactor is shutdown and peak power is limited to 1% of RATED THERMAL POWER with the peak fuel enthalpy well below the fuel failure threshold of 170 cal/gm. Based on this analysis, the IRM provides protection against local control rod errors and continuous withdrawal of control rods in sequence and provides backup protection for the APRM.

2. Average Power Range Monitor

For operation at low pressure and low flow during STARTUP, the APRM scram setting of 15% of RATED THERMAL POWER provides adequate thermal margin between the setpoint and the Safety Limits. The margin accommodates the anticipated maneuvers associated with power plant startup. Effects of increasing pressure at zero or low void content are minor and cold water from sources available during startup is not much colder than that already in the system. Temperature coefficients are small and control rod patterns are constrained by the RWM. Of all the possible sources of reactivity input, uniform control rod withdrawal is the most probable cause of significant power increase. Because

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. With one channel required by Table 3.3.1-1 inoperable in one or more Functional Units, place the inoperable channel and/or that trip system in the tripped condition* within 12 hours.

b. With two or more channels required by Table 3.3.1-1 inoperable in one or more Functional Units:

   1. Within one hour, verify sufficient channels remain OPERABLE or tripped* to maintain trip capability in the Functional Unit, and

   2. Within 6 hours, place the inoperable channel(s) in one trip system and/or that trip system** in the tripped condition*, and

   3. Within 12 hours, restore the inoperable channels in the other trip system to an OPERABLE status or tripped*.

c. Otherwise, take the ACTION required by Table 3.3.1-1 for the Functional Unit.

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 and simulated automatic operation of all channels shall be performed at least once per 18 months.

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 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 reactor trip system.

---

* An inoperable channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable channel is not restored to OPERABLE status within the required time, the ACTION required by Table 3.3.1-1 for the Functional Unit shall be taken.

** This ACTION applies to that trip system with the most inoperable channels; if both trip systems have the same number of inoperable channels, the ACTION can be applied to either trip system.

TABLE 3.3.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
1. Intermediate Range Monitors:			
a. Neutron Flux - High	2	3	1
	3, 4	2	2
	5(b)	3	3
b. Inoperative	2	3	1
	3, 4	2	2
	5	3	3
2. Average Power Range Monitor:(c)			
a. Neutron Flux - High, Setdown	2	2	1
	3	2	2
	5(b)	2	3
b. Flow Biased Simulated Thermal Power-Upscale	1	2	4
c. Fixed Neutron Flux-High	1	2	4
d. Inoperative	1, 2	2	1
	3	2	2
	5	2	3
3. Reactor Vessel Steam Dome Pressure - High	1, 2(d)	2	1
4. Reactor Vessel Water Level - Low, Level 3	1, 2	2	1
5. Main Steam Line Isolation Valve - Closure	1(e)	4	4
6. Main Steam Line Radiation - High	1, 2(d)	2	5

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

TABLE NOTATIONS

(a) 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 OPERABLE channel in the same trip system is monitoring that parameter.

(b) The "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn* and during shutdown margin demonstrations performed per Specification 3.10.3.

(c) An APRM channel is inoperable if there are less than 2 LPRM inputs per level or less than 14 LPRM inputs to an APRM channel.

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

(e) This function shall be automatically bypassed when the reactor mode switch is not in the Run position.

(f) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.

(g) Also actuates the standby gas treatment system.

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

(i) This function shall be automatically bypassed when turbine first stage pressure is $\leq$ 140 psig, equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER.

(j) Also actuates the EOC-RPT system.

---

* Not required for control rods removed per Specifications 3.9.10.1 or 3.9.10.2.

TABLE 4.3.1.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION[a]	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
1. Intermediate Range Monitors				
a. Neutron Flux - High	S/U[b], S	S/U[c], W	R	2*
	S	W	R	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[b], S	S/U[c], W	SA	2*
	S	W	SA	3*, 5
b. Flow Biased Simulated Thermal Power-Upscale	S, D[g]	S/U[c], Q	W[d][e], SA, R[h]	1
c. Fixed Neutron Flux - High	S	S/U[c], Q	W[d], SA	1
d. Inoperative	NA	Q	NA	1, 2, 3, 5
3. Reactor Vessel Steam Dome Pressure - High	NA	Q	Q	1, 2
4. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2
5. Main Steam Line Isolation Valve - Closure	NA	Q	R	1
6. Main Steam Line Radiation - High	S	Q	R	1, 2
7. Primary Containment Pressure - High	NA	Q	Q	1, 2

TABLE 4.3.1.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
8. Scram Discharge Volume Water Level - High	NA	Q	R	1, 2, 5
9. Turbine Stop Valve - Closure	NA	Q	R	1
10. Turbine Control Valve Fast Closure Valve Trip System Oil Pressure - Low	NA	Q	R	1
11. Reactor Mode Switch Shutdown Position	NA	R	NA	1, 2, 3, 4, 5
12. Manual Scram	NA	W	NA	1, 2, 3, 4, 5
13. Control Rod Drive				
a. Charging Water Header Pressure - Low	NA	M	R	2, 5
b. Delay Timer	NA	M	R	2, 5

(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 decades during each startup and the IRM and APRM channels shall be determined to overlap for at least 1/2 decades 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 levels calculated by a heat balance during OPERATIONAL CONDITION 1 when THERMAL POWER ≥ 25% of RATED THERMAL POWER. The APRM Gain Adjustment Factor (GAF) for any channel shall be equal to the power value determined by the heat balance divided by the APRM reading for that channel.

Within 2 hours, adjust any APRM channel with a GAF > 1.02. In addition, adjust any APRM channel within 12 hours, if power is greater than or equal to 90% of RATED THERMAL POWER and the APRM channel GAF is < 0.98. Until any required APRM adjustment has been accomplished, notification shall be posted on the reactor control panel.
(e) This calibration shall consist of the adjustment of the APRM flow biased channel to conform to a calibrated flow signal.
(f) The LPRMs shall be calibrated at least once per 1000 effective full power hours (EFPH).
(g) Measure and compare core flow to rated core flow.
(h) This calibration shall consist of verifying the 6 ± 1 second simulated thermal power time constant.

* The provisions of Specification 4.0.4 are not applicable for a period of 24 hours after entering OPERATIONAL CONDITION 2 or 3 when shutting down from OPERATIONAL CONDITION 1.

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The isolation actuation instrumentation 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 an isolation actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values 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. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System Requirement for one trip system, either

   1. Place the inoperable channel(s) and/or trip system in the tripped condition* within

      a) 1 hour for trip functions without an OPERABLE channel,
      b) 12 hours for trip functions common to RPS Instrumentation, and
      c) 24 hours for trip functions not common to RPS Instrumentation,

   or

   2. Take the ACTION required by Table 3.3.2-1.

c. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems,

   1. Place at least one trip system** in the tripped condition*** within one hour, and

   2. a) Place the inoperable channel(s) in the remaining trip system in the tripped condition*** within

      1) 1 hour for trip functions without an OPERABLE channel,
      2) 12 hours for trip functions common to RPS Instrumentation, and
      3) 24 hours for trip functions not common to RPS Instrumentation,

      or

      b) Take the ACTION required by Table 3.3.2-1.

---

* 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.

** If more channels are inoperable in one trip system than in the other, select that trip system to place in the tripped condition except when this would cause the Trip Function to occur.

*** 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 1 hour or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.

ISOLATION ACTUATION INSTRUMENTATION
ACTION

ACTION 20 - Be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

ACTION 21 - Be in at least STARTUP with the associated isolation valves closed within 6 hours or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

ACTION 22 - Close the affected system isolation valves within 1 hour and declare the affected system inoperable.

ACTION 23 - Be in at least STARTUP within 6 hours.

ACTION 24 - Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within 1 hour.

ACTION 25 - Lock the affected system isolation valves closed within 1 hour and declare the affected system inoperable.

ACTION 26 - Provided that the manual initiation function is OPERABLE for each other group valve, inboard or outboard, as applicable, in each line, restore the manual initiation function to OPERABLE status within 24 hours; otherwise, restore the manual initiation function to OPERABLE status within 8 hours; otherwise:

a. Be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours, or
b. Close the affected system isolation valves within the next hour and declare the affected system inoperable.

NOTES

* May be bypassed with reactor steam pressure ≤ 1043 psig and all turbine stop valves closed.

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

\# During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

(a) Deleted.

(b) 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. In addition for those trip systems with a design providing only one channel per trip system, the channel may be placed in an inoperable status for up to 8 hours for required surveillance testing without placing the channel in the tripped condition provided that the redundant isolation valve, inboard or outboard, as applicable, in each line is operable and all required actuation instrumentation for that redundant valve is OPERABLE, or place the trip system in the tripped condition.

(c) Also actuates the standby gas treatment system.

(d) A channel is OPERABLE if 2 of 4 instruments in that channel are OPERABLE.

(e) Also actuates secondary containment ventilation isolation dampers per Table 3.6.5.2-1.

(f) Closes only RWCU system inlet outboard valve.

TABLE 4.3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
A. AUTOMATIC INITIATION				
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level				
1) Low, Level 3	S	Q	R	1, 2, 3
2) Low Low, Level 2	NA	Q	R	1, 2, 3
3) Low Low Low, Level 1	S	Q	R	1, 2, 3
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. Main Steam Line				
1) Radiation - High	S	Q	R	1, 2, 3
2) Pressure - Low	NA	Q	Q	1
3) Flow - High	NA	Q	R	1, 2, 3
d. Main Steam Line Tunnel Temperature - High	NA	Q	R	1, 2, 3
e. Condenser Vacuum - Low	NA	Q	Q	1, 2*, 3*
f. Main Steam Line Tunnel Δ Temperature - High	NA	Q	R	1, 2, 3
2. SECONDARY CONTAINMENT ISOLATION				
a. Reactor Building Vent Exhaust Plenum Radiation - High	S	Q	R	1, 2, 3, and **
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	R	1, 2, 3, and #
d. Fuel Pool Vent Exhaust Radiation - High	S	Q	R	1, 2, 3, and **
3. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High	S	Q	R	1, 2, 3
b. Heat Exchanger Area Temperature - High	NA	Q	Q	1, 2, 3
c. Heat Exchanger Area Ventilation ΔT - High	NA	Q	Q	1, 2, 3
d. SLCS Initiation	NA	R	NA	1, 2, 3
e. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	R	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION				
a. RCIC Steam Line Flow - High	NA	Q	Q	1, 2, 3
b. RCIC Steam Supply Pressure - Low	NA	Q	Q	1, 2, 3
c. RCIC Turbine Exhaust Diaphragm Pressure - High	NA	Q	Q	1, 2, 3
d. RCIC Equipment Room Temperature - High	NA	Q	Q	1, 2, 3
e. RCIC Steam Line Tunnel Temperature - High	NA	Q	Q	1, 2, 3
f. RCIC Steam Line Tunnel Δ Temperature - High	NA	Q	Q	1, 2, 3
g. Drywell Pressure - High	NA	Q	Q	1, 2, 3
h. RCIC Equipment Room Δ Temperature - High	NA	Q	Q	1, 2, 3
5. RHR SYSTEM STEAM CONDENSING MODE ISOLATION				
a. RHR Equipment Area Δ Temperature - High	NA	Q	Q	1, 2, 3
b. RHR Area Cooler Temperature - High	NA	Q	Q	1, 2, 3
c. RHR Heat Exchanger Steam Supply Flow - High	NA	Q	Q	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION				
a. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2, 3
b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	NA	Q	Q	1, 2, 3
c. RHR Pump Suction Flow - High	NA	Q	Q	1, 2, 3
d. RHR Area Temperature - High	NA	Q	Q	1, 2, 3
e. RHR Equipment Area ΔT - High	NA	Q	Q	1, 2, 3
B. MANUAL INITIATION				
1. Inboard Valves	NA	R	NA	1, 2, 3
2. Outboard Valves	NA	R	NA	1, 2, 3
3. Inboard Valves	NA	R	NA	1, 2, 3 and **,#
4. Outboard Valves	NA	R	NA	1, 2, 3 and **,#
5. Inboard Valves	NA	R	NA	1, 2, 3
6. Outboard Valves	NA	R	NA	1, 2, 3
7. Outboard Valve	NA	R	NA	1, 2, 3

* When reactor steam pressure > 1043 psig and/or any turbine stop valve is open.

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

\# During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

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 Values 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 "A" or "B" inoperable, restore the inoperable trip system to OPERABLE status within:

   1. 7 days, provided that the HPCS and RCIC systems are OPERABLE.

   2. 72 hours.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 122 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 and simulated automatic operation of all channels shall be performed at least once per 18 months.

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 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[a]	APPLICABLE OPERATIONAL CONDITION	ACTION
B. DIVISION 2 TRIP SYSTEM			
1. RHR B & C (LPCI MODE)			
a. Reactor Vessel Water Level - Low, Low Low, Level 1	2[b]	1, 2, 3, 4*, 5*	30
b. Drywell Pressure - High	2[b]	1, 2, 3	30
c. LPCI B and C Injection Valve Injection Line Pressure-Low (Permissive)	1/valve	1, 2, 3 4*, 5*	32 33
d. LPCI Pump B Start Time Delay Relay	1	1, 2, 3, 4*, 5*	32
e. LPCI Pump Discharge Flow - Low (Bypass)	1/pump	1, 2, 3, 4*, 5*	31
f. Manual Initiation	1/division	1, 2, 3, 4*, 5*	34
g. LPCI B and C Injection Valve Reactor Pressure-Low (Permissive)	2	1, 2, 3 4*, 5*	38 33
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B"#			
a. Reactor Vessel Water Level - Low Low Low, Level 1 coincident with	2[b]	1, 2, 3	30
b. Drywell Pressure - High	2[b]	1, 2, 3	30
c. Initiation Timer	1	1, 2, 3	32
d. Reactor Vessel Water Level - Low, Level 3 (Permissive)	1	1, 2, 3	32
e. LPCI Pump B and C Discharge Pressure - High (Permissive)	2/pump	1, 2, 3	32
f. Manual Initiation	1/division	1, 2, 3	34
g. Drywell Pressure Bypass Timer	1	1, 2, 3	32
h. Manual Inhibit	1/division	1, 2, 3	34

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[a]	APPLICABLE OPERATIONAL CONDITION	ACTION
C. DIVISION 3 TRIP SYSTEM			
1. HPCS SYSTEM			
a. Reactor Vessel Water Level - Low, Low, Level 2	4[b]	1, 2, 3, 4*, 5*	35
b. Drywell Pressure - High	4[b]	1, 2, 3	35
c. Reactor Vessel Water Level-High, Level 8	2[c]	1, 2, 3, 4*, 5*	32
d. Deleted			
e. Deleted			
f. Pump Discharge Pressure-High (Bypass)	1	1, 2, 3, 4*, 5*	31
g. HPCS System Flow Rate-Low (Permissive)	1	1, 2, 3, 4*, 5*	31
h. Manual Initiation	1/division	1, 2, 3, 4*, 5*	34

D. LOSS OF POWER	TOTAL NO. OF INSTRUMENTS	INSTRUMENTS TO TRIP	MINIMUM OPERABLE INSTRUMENTS[d]	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37
2. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37

(a) A channel instrument may be placed in an inoperable status for up to 6 hours during periods of required surveillance without placing the trip system/channel/instrument in the tripped condition provided at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter.
(b) Also actuates the associated division diesel generator.
(c) Provides signal to close HPCS pump discharge valve only on 2-out-of-2 logic.
(d) A channel/instrument may be placed in an inoperable status for up to 2 hours during periods of required surveillance without placing the trip system/channel/instrument in the tripped condition provided at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter.
* Applicable 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 ≤ 122 psig.

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 requirement:

a. With one channel inoperable, place the inoperable channel in the tripped condition within 24 hours or declare the associated system inoperable.

b. With more than one channel inoperable, declare the associated system inoperable.

ACTION 31 - 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 24 hours; restore the inoperable channel to OPERABLE status within 7 days or declare the associated system inoperable.

ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, declare the associated ADS trip system or ECCS inoperable within 24 hours.

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

ACTION 34 - 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 trip system or ECCS inoperable.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement

a. For one trip system, place that trip system in the tripped condition within 24 hours or declare the HPCS system inoperable.

b. For both trip systems, declare the HPCS system inoperable.

ACTION 36 - Deleted

ACTION 37 - With the number of OPERABLE instruments less than the Minimum Operable Instruments, place the inoperable instrument(s) in the tripped condition within 1 hour or declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2 as appropriate.

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION
ACTION

ACTION 38 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per trip function requirements:

a. With one channel inoperable, remove the inoperable channel within 24 hours; restore the inoperable channel to OPERABLE status within 7 days or declare the associated ECCS systems inoperable.

b. With both channels inoperable, restore at least one channel to OPERABLE status within one hour or declare the associated ECCS systems inoperable.

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	1, 2, 3, 4*, 5*
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. LPCS Pump Discharge Flow-Low	NA	Q	Q	1, 2, 3, 4*, 5*
d. LPCS and LPCI A Injection Valve Injection Line Pressure Low Interlock	NA	Q	R	1, 2, 3, 4*, 5*
e. LPCS and LPCI A Injection Valve Reactor Pressure Low Interlock	NA	Q	R	1, 2, 3, 4*, 5*
f. LPCI Pump A Start Time Delay Relay	NA	Q	Q	1, 2, 3, 4*, 5*
g. LPCI Pump A Flow-Low	NA	Q	Q	1, 2, 3, 4*, 5*
h. Manual Initiation	NA	R	NA	1, 2, 3, 4*, 5*
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "A"#				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R	1, 2, 3
b. Drywell Pressure-High	NA	Q	Q	1. 2, 3
c. Initiation Timer	NA	Q	Q	1, 2, 3
d. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2, 3
e. LPCS Pump Discharge Pressure-High	NA	Q	Q	1, 2, 3
f. LPCI Pump A Discharge Pressure-High	NA	Q	Q	1, 2, 3
g. Manual Initiation	NA	R	NA	1, 2, 3
h. Drywell Pressure Bypass Timer	NA	Q	Q	1, 2, 3
i. Manual Inhibit	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 2 TRIP SYSTEM				
1. RHR B AND C (LPCI MODE)				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R	1, 2, 3, 4*, 5*
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. LPCI B and C Injection Valve Injection Line Pressure Low Interlock	NA	Q	R	1, 2, 3, 4*, 5*
d. LPCI Pump B Start Time Delay Relay	NA	Q	Q	1, 2, 3, 4*, 5*
e. LPCI Pump Discharge Flow-Low	NA	Q	Q	1, 2, 3, 4*, 5*
f. Manual Initiation	NA	R	NA	1, 2, 3, 4*, 5*
g. LPCI B and C Injection Valve Reactor Pressure Low Interlock	NA	Q	R	1, 2, 3, 4*, 5*
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B"#				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R	1, 2, 3
b. Drywell Pressure-High	NA	Q	Q	1, 2, 3
c. Initiation Timer	NA	Q	Q	1, 2, 3
d. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2, 3
e. LPCI Pump B and C Discharge Pressure-High	NA	Q	Q	1, 2, 3
f. Manual Initiation	NA	R	NA	1, 2, 3
h. Drywell Pressure Bypass Timer	NA	Q	Q	1, 2, 3
i. Manual Inhibit	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 3 TRIP SYSTEM				
1. HPCS SYSTEM				
a. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R	1, 2, 3, 4*, 5*
b. Drywell Pressure-High	NA	Q	Q	1, 2, 3
c. Reactor Vessel Water Level-High Level 8	S	Q	R	1, 2, 3, 4*, 5*
d. Deleted				
e. Deleted				
f. Pump Discharge Pressure-High	NA	Q	Q	1, 2, 3, 4*, 5*
g. HPCS System Flow Rate-Low	NA	Q	Q	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)	NA	NA	R	1, 2, 3, 4**, 5**

\# Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 122 psig.
* When the system is required to be OPERABLE after being manually realigned, as applicable, per Specification 3.5.2.
** Required when ESF equipment is required to be OPERABLE.

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 recirculation pump trip system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.4.1-2, 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 one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both trip systems, place the inoperable channel(s) in the tripped condition within 24 hours.

c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system and:

   1. If the inoperable channels consist of one reactor vessel water level channel and one reactor vessel pressure channel, place both inoperable channels in the tripped condition within 24 hours, or, if this action will initiate a pump trip, declare the trip system inoperable.

   2. If the inoperable channels include two reactor vessel water level channels or two reactor vessel pressure channels, declare the trip system inoperable.

d. With one trip system inoperable, restore the inoperable trip system to OPERABLE status within 72 hours or be in at least STARTUP within the next 6 hours.

e. With both trip systems inoperable, restore at least one trip system to OPERABLE status within 1 hour or be in at least STARTUP within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.3.4.1.1 Each ATWS recirculation pump trip 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 channel in one trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided that all other channels are OPERABLE.

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	Q

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 greater than or equal to 30% of RATED THERMAL POWER.

ACTION:

a. With an end-of-cycle recirculation pump trip system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values 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 the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both trip systems, place the inoperable channel(s) in the tripped condition within 12 hours.

c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement(s) for one trip system and:

   1. If the inoperable channels consist of one turbine control valve channel and one turbine stop valve channel, place both inoperable channels in the tripped condition within 12 hours.

   2. If the inoperable channels include two turbine control valve channels or two turbine stop valve channels, declare the trip system inoperable.

d. With one trip system inoperable, restore the inoperable trip system to OPERABLE status within 72 hours. Otherwise, either:

   1. Increase the MINIMUM CRITICAL POWER RATIO (MCPR) Limiting Condition for Operation (LCO) to the EOC-RPT inoperable value per Specification 3.2.3 within the next 1 hour or,

   2. Reduce THERMAL POWER to less than 30% of RATED THERMAL POWER within the next 6 hours.

e. With both trip systems inoperable, restore at least one trip system to OPERABLE status within 1 hour. Otherwise, either:

TABLE 3.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

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

(a) A trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided that the other trip system is OPERABLE.
(b) This function shall be automatically bypassed when turbine first stage pressure is less than or equal to 140 psig, equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER.

TABLE 3.3.4.2-2

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
1. Turbine Stop Valve-Closure	≤ 5% closed	≤ 7% closed
2. Turbine Control Valve - Fast Closure	≥ 500 psig	≥ 414 psig

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 a RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values 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 and simulated automatic operation of all channels shall be performed at least once per 18 months.

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTIONAL UNITS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM[a]	ACTION
a. Reactor Vessel Water Level - Low Low, Level 2	2	50
b. Reactor Vessel Water Level - High, Level 8	2[b]	51
c. Manual Initiation	1[c]	52

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

(c) Single channel.

TABLE 3.3.5-1 (Continued)

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

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

a. For one trip system, place the inoperable channel in the tripped condition within 24 hours or declare the RCIC system inoperable.

b. For both trip systems, 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, 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	≥ - 50 inches*	≥ - 57 inches*
b. Reactor Vessel Water Level - High, level 8	≤ 55.5 inches*	≤ 56 inches*
c. Manual Initiation	NA	NA

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

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	NA	Q	R
b. Reactor Vessel Water Level - High, Level 8	S	Q	R
c. Manual Initiation	NA	R	NA

3/4.3.6 CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.6 The control rod withdrawal 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 withdrawal block instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values 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 System requirement, take the ACTION required by Table 3.3.6-1.

SURVEILLANCE REQUIREMENTS

4.3.6 Each of the above required control rod withdrawal 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.

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* A channel may be placed in an inoperable status for up to 6 hours for required surveillance (or 12 hours for repair) 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.

TABLE 3.3.6-1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. ROD BLOCK MONITOR[a]			
a. Upscale	2	1*	60
b. Inoperative	2	1*	60
c. Downscale	2	1*	60
2. APRM			
a. Flow Biased Simulated Thermal Power-Upscale	4	1	61
b. Inoperative	4	1, 2, 5	61
c. Downscale	4	1	61
d. Neutron Flux-High	4	2, 5	61
3. SOURCE RANGE MONITORS			
a. Detector not full in[b]	3	2	61
	2	5	61
b. Upscale[c]	3	2	61
	2	5	61
c. Inoperative[c]	3	2	61
	2	5	61
d. Downscale[d]	3	2	61
	2	5	61
4. INTERMEDIATE RANGE MONITORS			
a. Detector not full in[e]	6	2, 5	61
b. Upscale	6	2, 5	61
c. Inoperative	6	2, 5	61
d. Downscale[e]	6	2, 5	61
5. SCRAM DISCHARGE VOLUME			
a. Water Level-High	2	1, 2, 5**	62
b. Scram Discharge Volume Switch in Bypass	1	5**	62
6. RECIRCULATION FLOW UNIT			
a. Upscale	2	1	62
b. Inoperative	2	1	62
c. Comparator	2	1	62

TABLE 3.3.6-1 (Continued)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

ACTION

ACTION 60 - Declare the RBM inoperable and take the ACTION required by Specification 3.1.4.3.

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 one 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 12 hours.

NOTE

* With THERMAL POWER ≥ 30% of RATED THERMAL POWER.

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

a. The RBM shall be automatically bypassed when a peripheral control rod is selected.

b. This function shall be automatically bypassed if detector count rate is ≥ 100 cps or the IRM channels are on range 3 or higher.

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

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

e. This function shall be automatically bypassed when the IRM channels are on range 1.

TABLE 4.3.6-1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION[a]	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
1. ROD BLOCK MONITOR				
a. Upscale	NA	S/U[b][c], Q[c]	Q	1*
b. Inoperative	NA	S/U[b][c], Q[c]	N.A.	1*
c. Downscale	NA	S/U[b][c], Q[c]	Q	1*
2. APRM				
a. Flow Biased Simulated Thermal Power-Upscale	NA	S/U[b], Q	SA	1
b. Inoperative	NA	S/U[b], Q	N.A.	1, 2, 5
c. Downscale	NA	S/U[b], Q	SA	1
d. Neutron Flux-High	NA	S/U[b], Q	SA	2***, 5
3. SOURCE RANGE MONITORS				
a. Detector not full in	NA	S/U[b], W	N.A.	2***, 5
b. Upscale	NA	S/U[b], W	Q	2***, 5
c. Inoperative	NA	S/U[b], W	N.A.	2***, 5
d. Downscale	NA	S/U[b], W	Q	2***, 5
4. INTERMEDIATE RANGE MONITORS				
a. Detector not full in	NA	S/U[b], W	N.A.	2***, 5
b. Upscale	NA	S/U[b], W	Q	2***, 5
c. Inoperative	NA	S/U[b], W	N.A.	2***, 5
d. Downscale	NA	S/U[b], W	Q	2***, 5
5. SCRAM DISCHARGE VOLUME				
a. Water Level-High	NA	Q	R	1, 2, 5**
b. Scram Discharge Volume Switch in Bypass	NA	Q	N.A.	5**
6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW				
a. Upscale	NA	S/U[b], Q	Q	1
b. Inoperative	NA	S/U[b], Q	N.A.	1
c. Comparator	NA	S/U[b], Q	Q	1

TABLE 4.3.6-1 (Continued)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NOTES:

a. Neutron detectors may be excluded from CHANNEL CALIBRATION.

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

c. Includes reactor manual control multiplexing system input.

* With THERMAL POWER ≥ 30% of RATED THERMAL POWER.

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

*** The provisions of Specification 4.0.4 are not applicable for a period of 24 hours after entering OPERATIONAL CONDITION 2 or 3 when shutting down from OPERATIONAL CONDITION 1.

TABLE 3.3.7.1-1

RADIATION MONITORING INSTRUMENTATION

INSTRUMENTATION	MINIMUM CHANNELS OPERABLE	APPLICABLE CONDITIONS	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
a. Main Control Room Atmospheric Control System Radiation Monitoring Subsystem	2/intake**	1,2,3,5 and *	3.5 mR/hr	0.1 to 10,000 mR/hr	70

NOTES

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

** A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition, provided at least one other operable channel in the same Trip System is monitoring that Trip Function.

TABLE 4.3.7.1-1

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENTATION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
a. Main Control Room Atmospheric Control System Radiation Monitoring Subsystem	S	Q	R	1,2,3,5 and *

NOTES

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

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.8 The feedwater/main turbine trip system actuation instrumentation channels shown in Table 3.3.8-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.8-2.

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

a. With a feedwater/main turbine trip system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.8-2, 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 one less than that required by the Minimum OPERABLE Channels per Trip System requirement:

   1. Within 7 days, either place the inoperable channel in the tripped* condition or restore the inoperable channel to OPERABLE status.

   2. Otherwise, be in at least STARTUP within 6 hours.

c. With the number of OPERABLE channels two less than required by the Minimum OPERABLE Channels per Trip System requirement:

   1. Within two hours place or verify at least one inoperable channel in the tripped* condition, and restore either inoperable channel to OPERABLE status within 72 hours, or,

   2. Be in at least STARTUP within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.3.8.1 Each feedwater/main turbine trip 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 4.3.8.1-1.

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

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* An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur.

TABLE 3.3.8-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM
a. Reactor Vessel Water Level-High, Level 8	3*

* A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition.

TABLE 4.3.8.1-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
a. Reactor Vessel Water Level-High, Level 8	S	Q	R

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

The reactor protection system automatically initiates a reactor scram to:

a. Preserve the integrity of the fuel cladding.

b. Preserve the integrity of the reactor coolant system.

c. Minimize the energy which must be adsorbed following a loss-of-coolant accident, and

d. Prevent inadvertent criticality.

This specification provides the limiting conditions for operation necessary to preserve the ability of the system to perform its intended function even during periods when instrument channels may be out of service because of maintenance. When necessary, one channel may be made inoperable for brief intervals to conduct required surveillance.

The reactor protection system is made up of two independent trip systems. There are usually four channels to monitor each parameter with two channels in each trip system. The outputs of the channels in a trip system are combined in a logic so that either channel will trip that trip system. The tripping of both trip systems will produce a reactor scram. The system meets the intent of IEEE-279, 1971, for nuclear power plant protection systems. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System", March 1988, and MDE-83-0485 Revision 3, "Technical Specification Improvement Analysis for the Reactor Protection System for LaSalle County Station, Units 1 and 2", April 1991. The bases for the trip settings of the RPS are discussed in the bases for Specification 2.2.1. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains RPS trip capability.

The measurement of response time at the specified frequencies provides assurance that the protective functions associated with each channel are completed within the time limit assumed in the accident analysis. No credit was taken for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping or total channel test measurement, provided such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either (1) inplace, onsite or offsite test measurements, or (2) utilizing replacement sensors with certified response times.

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

This specification ensures the effectiveness of the instrumentation used to mitigate the consequences of accidents by prescribing the OPERABILITY trip setpoints and response times for isolation of the reactor systems. When necessary, one channel may be inoperable for brief intervals to conduct required surveillance. Both channels of each trip system for the main steam tunnel ambient temperature and ventilation system differential temperature may be placed in an inoperable status for up to 4 hours for required reactor building ventilation system maintenance and testing and 12 hours for the required secondary containment Leak Rate test without placing the trip system in the tripped condition. This will allow for maintaining the reliability of the ventilation system and secondary containment. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analyses for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation", March 1989, and with NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation", July 1990. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains primary containment isolation capability. Some of the trip settings may have tolerances explicitly stated where both the high and low values are critical and may have a substantial effect on safety. The setpoints of other instrumentation, where only the high or low end of the setting have a direct bearing on safety, are established at a level away from the normal operating range to prevent inadvertent actuation of the systems involved.

Except for the MSIVs, the safety analysis does not address individual sensor response times or the response times of the logic systems to which the sensors are connected. For A.C. operated valves, it is assumed that the A.C. power supply is lost and is restored by startup of the emergency diesel generators. In this event, a time of 13 seconds is assumed before the valve starts to move. The safety analysis considers an allowable inventory loss which in turn determines the valve speed in conjunction with the 13 second delay.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

The emergency core cooling system actuation instrumentation is provided to initiate actions to mitigate the consequences of accidents that are beyond the ability of the operator to control. This specification provides the OPERABILITY requirements, trip setpoints and response times that will ensure effectiveness of the systems to provide the design protection. Although the instruments are listed by system, in some cases the same instrument may be used to send the actuation signal to more than one system at the same time.

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30936P-A, "Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation)", Parts 1 and 2, December 1988, and RE-025 Revision 1, "Technical Specification Improvement Analysis for the Emergency Core Cooling System Actuation Instrumentation for LaSalle County Station, Units 1 and 2", April 1991. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains ECCS initiation capability.

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

The anticipated transient without scram (ATWS) recirculation pump trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an anticipated transient. The response of the plant to this postulated event falls within the envelope of study events in General Electric Company Topical Report NEDO-10349, dated March 1971 and NEDO-24222, dated December, 1979, and Appendix G of the FSAR.

The end-of-cycle recirculation pump trip (EOC-RPT) system is a part of the Reactor Protection System and is an essential safety supplement to the reactor trip. The purpose of the EOC-RPT is to recover the loss of thermal margin which occurs at the end-of-cycle. The physical phenomenon involved is that the void reactivity feedback due to a pressurization transient can add positive reactivity to the reactor system at a faster rate than the control rods add negative scram reactivity. Each EOC-RPT system trips both recirculation pumps, reducing coolant flow in order to reduce the void collapse in the core during two of the most limiting pressurization events. The two events for which the EOC-RPT protective feature will function are closure of the turbine stop valves and fast closure of the turbine control valves.

A generic analysis, which provides for continued operation with one or both trip systems of the EOC-RPT system inoperable, has been performed. The analysis determined bounding cycle independent MINIMUM CRITICAL POWER RATIO (MCPR) Limiting Condition for Operation (LCO) values which must be used if the EOC-RPT system is inoperable. These values ensure that adequate reactivity margin to the MCPR safety limit exists in the event of the analyzed transient with the RPT function inoperable. The analysis results are further discussed in the bases for Specification 3.2.3.

A fast closure sensor from each of two turbine control valves provides input to the EOC-RPT system; a fast closure sensor from each of the other two turbine control valves provides input to the second EOC-RPT system. Similarly, a position switch for each of two turbine stop valves provides input to one EOC-RPT system; a position switch from each of the other two stop valves provides input to the other EOC-RPT system. For each EOC-RPT system, the sensor relay contacts are arranged to form a 2-out-of-2 logic for the fast closure of turbine control valves and a 2-out-of-2 logic for the turbine stop valves. The operation of either logic will actuate the EOC-RPT system and trip both recirculation pumps.

Each EOC-RPT system may be manually bypassed by use of a keyswitch which is administratively controlled. The manual bypasses and the automatic Operating Bypass at less than 30% of RATED THERMAL POWER are annunciated in the control room.

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with the following:

1. NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System", March 1988.

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

2. GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications", December 1992.

When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains the applicable RPT initiation capability.

The EOC-RPT system response time is the time assumed in the analysis between initiation of valve motion and complete suppression of the electric arc, i.e., 190 ms, less the time allotted for sensor response, i.e., 10 ms, and less the time allotted for breaker arc suppression determined by test, as correlated to manufacturer's test results, i.e., 83 ms, and plant pre-operational test results.

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

The reactor core isolation cooling system actuation instrumentation is provided to initiate actions to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without providing actuation of any of the emergency core cooling equipment.

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-2-A, "Addendum To Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications (BWR RCIC Instrumentation)", December 1992. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains RCIC initiation capability.

3/4.3.6 CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

The control rod block functions are provided consistent with the requirements of the specifications in Section 3/4.1.4, Control Rod Program Controls. The trip logic is arranged so that a trip in any one of the inputs will result in a control rod block.

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P-A, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation", October 1988, and GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications", December 1992. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains Control Rod Block capability.

3/4.3.7 MONITORING INSTRUMENTATION

3/4.3.7.1 RADIATION MONITORING INSTRUMENTATION

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

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications", December 1992. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains initiation capability.

3.4.3.7.2 SEISMIC MONITORING INSTRUMENTATION

The OPERABILITY of the seismic monitoring instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the unit. This instrumentation is consistent with the recommendations of Regulatory Guide 1.12 "Instrumentation for Earthquakes", April 1974.

3/4.3.7.3 METEOROLOGICAL MONITORING INSTRUMENTATION

The OPERABILITY of the meteorological monitoring instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public. This instrumentation is consistent with the recommendations of Regulatory Guide 1.23 "Onsite Meteorological Programs," February, 1972.

3/4.3.7.4 REMOTE SHUTDOWN MONITORING INSTRUMENTATION

The OPERABILITY of the remote shutdown monitoring instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT SHUTDOWN of the unit from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

3/4.3.7.10 DELETED

3/4.3.7.11 EXPLOSIVE GAS MONITORING INSTRUMENTATION

This instrumentation provides for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the waste gas holdup system.

3/4.3.7.12 LOOSE-PART DETECTION SYSTEM

The OPERABILITY of the loose-part detection system ensures that sufficient capability is available to detect loose metallic parts in the primary system and avoid or mitigate damage to primary system components. The allowable out-of-service times and surveillance requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors."

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

The feedwater/main turbine trip system actuation instrumentation is provided to initiate the feedwater system/main turbine trip system in the event of reactor vessel water level equal to or greater than the level 8 setpoint associated with a feedwater controller failure, to prevent overfilling the reactor vessel which may result in high pressure liquid discharge through the safety/relief valve discharge lines. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications", December 1992. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains Feedwater System/Main Turbine Trip System actuation capability.

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-374

LASALLE COUNTY STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 90
License No. NPF-18

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

   A. The application for amendment filed by the Commonwealth Edison Company (the licensee), dated December 14, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 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 set forth in 10 CFR Chapter I;

   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 enclosure to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-18 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 90 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This amendment is effective upon the date of issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION

William D. Reckley

William D. Reckley, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 2, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 90

FACILITY OPERATING LICENSE NO. NPF-18

DOCKET NO. 50-374

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain a vertical line indicating the area of change. Pages indicated by an asterisk are provided for convenience only.

REMOVE	INSERT
XII	XII
XIII	XIII
B 2-9	B 2-9
3/4 3-1	3/4 3-1
3/4 3-2*	3/4 3-2*
3/4 3-5	3/4 3-5
3/4 3-7	3/4 3-7
3/4 3-8	3/4 3-8
3/4 3-9	3/4 3-9
3/4 3-10*	3/4 3-10*
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3/4 3-20	3/4 3-20
3/4 3-21	3/4 3-21
3/4 3-22	3/4 3-22
3/4 3-26	3/4 3-26
3/4 3-27	3/4 3-27
3/4 3-27(a)	3/4 3-27(a)
3/4 3-32	3/4 3-32
3/4 3-33	3/4 3-33
3/4 3-34	3/4 3-34
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3/4 3-38	3/4 3-38
3/4 3-39	3/4 3-39
3/4 3-40*	3/4 3-40*
3/4 3-41	3/4 3-41
3/4 3-42*	3/4 3-42*
3/4 3-45*	3/4 3-45*
3/4 3-46	3/4 3-46
3/4 3-47	3/4 3-47
3/4 3-48*	3/4 3-48*
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
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REMOVE (continued)	INSERT (continued)
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3/4 3-89	3/4 3-89
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2.2.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

The Reactor Protection System instrumentation setpoints specified in Table 2.2.1-1 are the values at which the reactor trips are set for each parameter. The Trip Setpoints have been selected to ensure that the reactor core and reactor coolant system are prevented from exceeding their Safety Limits during normal operation and design basis anticipated operational occurrences and to assist in mitigating the consequences of accidents. Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

1. Intermediate Range Monitor, Neutron Flux - High

The IRM system consists of 8 chambers, 4 in each of the reactor trip systems. The IRM is a 5 decade 10 range instrument. The trip setpoint of 120 divisions of scale is active in each of the 10 ranges. Thus as the IRM is ranged up to accommodate the increase in power level, the trip setpoint is also ranged up. The IRM instruments provide for overlap with both the APRM and SRM systems.

The most significant source of reactivity changes during the power increase is due to control rod withdrawal. In order to ensure that the IRM provides the required protection, a range of rod withdrawal accidents have been analyzed. The results of these analyses are in Section 15.4.1.2 of the FSAR. The most severe case involves an initial condition in which THERMAL POWER is at approximately 1% of RATED THERMAL POWER. Additional conservatism was taken in this analysis by assuming the IRM channel closest to the control rod being withdrawn is bypassed. The results of this analysis show that the reactor is shutdown and peak power is limited to 1% of RATED THERMAL POWER with the peak fuel enthalpy well below the fuel failure threshold of 170 cal/gm. Based on this analysis, the IRM provides protection against local control rod errors and continuous withdrawal of control rods in sequence and provides backup protection for the APRM.

2. Average Power Range Monitor

For operation at low pressure and low flow during STARTUP, the APRM scram setting of 15% of RATED THERMAL POWER provides adequate thermal margin between the setpoint and the Safety Limits. The margin accommodates the anticipated maneuvers associated with power plant startup. Effects of increasing pressure at zero or low void content are minor and cold water from sources available during startup is not much colder than that already in the system. Temperature coefficients are small and control rod patterns are constrained by the RWM. Of all the possible sources of reactivity input, uniform control rod withdrawal is the most probable cause of significant power increase. Because

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. With one channel required by Table 3.3.1-1 inoperable in one or more Functional Units, place the inoperable channel and/or that trip system in the tripped condition* within 12 hours.

b. With two or more channels required by Table 3.3.1-1 inoperable in one or more Functional Units:

   1. Within one hour, verify sufficient channels remain OPERABLE or tripped* to maintain trip capability in the Functional Unit, and

   2. Within 6 hours, place the inoperable channel(s) in one trip system and/or that trip system** in the tripped condition*, and

   3. Within 12 hours, restore the inoperable channels in the other trip system to an OPERABLE status or tripped*.

c. Otherwise, take the ACTION required by Table 3.3.1-1 for the Functional Unit.

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 and simulated automatic operation of all channels shall be performed at least once per 18 months.

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 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 reactor trip system.

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* An inoperable channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable channel is not restored to OPERABLE status within the required time, the ACTION required by Table 3.3.1-1 for the Functional Unit shall be taken.

** This ACTION applies to that trip system with the most inoperable channels; if both trip systems have the same number of inoperable channels, the ACTION can be applied to either trip system.

TABLE 3.3.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
1. Intermediate Range Monitors:			
a. Neutron Flux - High	2	3	1
	3, 4	2	2
	5[b]	3	3
b. Inoperative	2	3	1
	3, 4	2	2
	5	3	3
2. Average Power Range Monitor:[c]			
a. Neutron Flux - High, Setdown	2	2	1
	3	2	2
	5[b]	2	3
b. Flow Biased Simulated Thermal Power-Upscale	1	2	4
c. Fixed Neutron Flux-High	1	2	4
d. Inoperative	1, 2	2	1
	3	2	2
	5	2	3
3. Reactor Vessel Steam Dome Pressure - High	1, 2[d]	2	1
4. Reactor Vessel Water Level - Low, Level 3	1, 2	2	1
5. Main Steam Line Isolation Valve - Closure	1[e]	4	4
6. Main Steam Line Radiation - High	1, 2[d]	2	5

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

TABLE NOTATIONS

(a) 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 OPERABLE channel in the same trip system is monitoring that parameter.

(b) The "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn* and during shutdown margin demonstrations performed per Specification 3.10.3.

(c) An APRM channel is inoperable if there are less than 2 LPRM inputs per level or less than 14 LPRM inputs to an APRM channel.

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

(e) This function shall be automatically bypassed when the reactor mode switch is not in the Run position.

(f) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.

(g) Also actuates the standby gas treatment system.

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

(i) This function shall be automatically bypassed when turbine first stage pressure is $\leq$ 140 psig, equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER.

(j) Also actuates the EOC-RPT system.

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* Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.

TABLE 4.3.1.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION(a)	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
1. Intermediate Range Monitors				
a. Neutron Flux - High	S/U(b), S	S/U(c), W	R	2*
	S	W	R	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(b), S	S/U(c), W	SA	2*
	S	W	SA	3*, 5
b. Flow Biased Simulated Thermal Power-Upscale	S, D(g)	S/U(c), Q	W(d)(e), SA, R(h)	1
c. Fixed Neutron Flux - High	S	S/U(c), Q	W(d), SA	1
d. Inoperative	NA	Q	NA	1, 2, 3, 5
3. Reactor Vessel Steam Dome Pressure - High	NA	Q	Q	1, 2
4. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2
5. Main Steam Line Isolation Valve - Closure	NA	Q	R	1
6. Main Steam Line Radiation - High	S	Q	R	1, 2
7. Primary Containment Pressure - High	NA	Q	Q	1, 2

TABLE 4.3.1.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
8. Scram Discharge Volume Water Level - High	NA	Q	R	1, 2, 5
9. Turbine Stop Valve - Closure	NA	Q	R	1
10. Turbine Control Valve Fast Closure Valve Trip System Oil Pressure - Low	NA	Q	R	1
11. Reactor Mode Switch Shutdown Position	NA	R	NA	1, 2, 3, 4, 5
12. Manual Scram	NA	W	NA	1, 2, 3, 4, 5
13. Control Rod Drive				
a. Charging Water Header Pressure - Low	NA	M	R	2, 5
b. Delay Timer	NA	M	R	2, 5

(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 decades during each startup and the IRM and APRM channels shall be determined to overlap for at least 1/2 decades 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 levels calculated by a heat balance during OPERATIONAL CONDITION 1 when THERMAL POWER ≥ 25% of RATED THERMAL POWER. The APRM Gain Adjustment Factor (GAF) for any channel shall be equal to the power value determined by the heat balance divided by the APRM reading for that channel.

Within 2 hours, adjust any APRM channel with a GAF > 1.02. In addition, adjust any APRM channel within 12 hours, if power is greater than or equal to 90% of RATED THERMAL POWER and the APRM channel GAF is < 0.98. Until any required APRM adjustment has been accomplished, notification shall be posted on the reactor control panel.
(e) This calibration shall consist of the adjustment of the APRM flow biased channel to conform to a calibrated flow signal.
(f) The LPRMs shall be calibrated at least once per 1000 effective full power hours (EFPH).
(g) Measure and compare core flow to rated core flow.
(h) This calibration shall consist of verifying the 6 ± 1 second simulated thermal power time constant.

* The provisions of Specification 4.0.4 are not applicable for a period of 24 hours after entering OPERATIONAL CONDITION 2 or 3 when shutting down from OPERATIONAL CONDITION 1.

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The isolation actuation instrumentation 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 an isolation actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values 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. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System Requirement for one trip system, either

   1. Place the inoperable channel(s) and/or trip system in the tripped condition* within

      a) 1 hour for trip functions without an OPERABLE channel,
      b) 12 hours for trip functions common to RPS Instrumentation, and
      c) 24 hours for trip functions not common to RPS Instrumentation,

   or

   2. Take the ACTION required by Table 3.3.2-1.

c. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems,

   1. Place at least one trip system** in the tripped condition*** within one hour, and

   2. a) Place the inoperable channel(s) in the remaining trip system in the tripped condition*** within

      1) 1 hour for trip functions without an OPERABLE channel,
      2) 12 hours for trip functions common to RPS Instrumentation, and
      3) 24 hours for trip functions not common to RPS Instrumentation,

      or

      b) Take the ACTION required by Table 3.3.2-1.

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* 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.

** If more channels are inoperable in one trip system than in the other, select that trip system to place in the tripped condition except when this would cause the Trip Function to occur.

*** 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 1 hour or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each isolation 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 4.3.2.1-1.

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

4.3.2.3 The ISOLATION SYSTEM RESPONSE TIME of each isolation 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 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 isolation trip system.

TABLE 3.3.2-1 (Continued)
ISOLATION ACTUATION INSTRUMENTATION

ACTION STATEMENTS

ACTION 20 - Be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

ACTION 21 - Be in at least STARTUP with the associated isolation valves closed within 6 hours or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

ACTION 22 - Close the affected system isolation valves within 1 hour and declare the affected system inoperable.

ACTION 23 - Be in at least STARTUP within 6 hours.

ACTION 24 - Establish SECONDARY CONTAINMENT INTEGRITY with the standby gas treatment system operating within 1 hour.

ACTION 25 - Lock the affected system isolation valves closed within 1 hour and declare the affected system inoperable.

ACTION 26 - Provided that the manual initiation function is OPERABLE for each other group valve, inboard or outboard, as applicable, in each line, restore the manual initiation function to OPERABLE status within 24 hours; otherwise, restore the manual initiation function to OPERABLE status within 8 hours; otherwise:

a. Be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours, or
b. Close the affected system isolation valves within the next hour and declare the affected system in operable.

TABLE NOTATIONS

* May be bypassed with reactor steam pressure < 1043 psig and all turbine stop valves closed.

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

\# During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

(a) Deleted.

(b) 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. In addition for those trip systems with a design providing only one channel per trip system, the channel may be placed in an inoperable status for up to 8 hours for required surveillance testing without placing the channel in the tripped condition provided that the redundant isolation valve, inboard or outboard, as applicable, in each line is operable and all required actuation instrumentation for that redundant valve is OPERABLE, or place the trip system in the tripped condition.

(c) Also actuates the standby gas treatment system.

(d) A channel is OPERABLE if 2 of 4 instruments in that channel are OPERABLE.

(e) Also actuates secondary containment ventilation isolation dampers per Table 3.6.5.2-1.

(f) Closes only RWCU system inlet outboard valve.

TABLE 4.3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
A. AUTOMATIC INITIATION				
1. PRIMARY CONTAINMENT ISOLATION				
a. Reactor Vessel Water Level				
1) Low, Level 3	S	Q	R	1, 2, 3
2) Low Low, Level 2	NA	Q	R	1, 2, 3
3) Low Low Low, Level 1	S	Q	R	1, 2, 3
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. Main Steam Line				
1) Radiation - High	S	Q	R	1, 2, 3
2) Pressure - Low	NA	Q	Q	1
3) Flow - High	NA	Q	R	1, 2, 3
d. Main Steam Line Tunnel Temperature - High	NA	Q	R	1, 2, 3
e. Condenser Vacuum - Low	NA	Q	Q	1, 2*, 3*
f. Main Steam Line Tunnel Δ Temperature - High	NA	Q	R	1, 2, 3
2. SECONDARY CONTAINMENT ISOLATION				
a. Reactor Building Vent Exhaust Plenum Radiation - High	S	Q	R	1, 2, 3 and **
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	R	1, 2, 3, and #
d. Fuel Pool Vent Exhaust Radiation - High	S	Q	R	1, 2, 3 and **
3. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High	S	Q	R	1, 2, 3
b. Heat Exchanger Area Temperature - High	NA	Q	Q	1, 2, 3
c. Heat Exchanger Area Ventilation ΔT - High	NA	Q	Q	1, 2, 3
d. SLCS Initiation	NA	R	NA	1, 2, 3
e. Reactor Vessel Water Level - Low Low, Level 2	NA	Q	R	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION				
a. RCIC Steam Line Flow - High	NA	Q	Q	1, 2, 3
b. RCIC Steam Supply Pressure - Low	NA	Q	Q	1, 2, 3
c. RCIC Turbine Exhaust Diaphragm Pressure - High	NA	Q	Q	1, 2, 3
d. RCIC Equipment Room Temperature - High	NA	Q	Q	1, 2, 3
e. RCIC Steam Line Tunnel Temperature - High	NA	Q	Q	1, 2, 3
f. RCIC Steam Line Tunnel Δ Temperature - High	NA	Q	Q	1, 2, 3
g. Drywell Pressure - High	NA	Q	Q	1, 2, 3
h. RCIC Equipment Room Δ Temperature - High	NA	Q	Q	1, 2, 3
5. RHR SYSTEM STEAM CONDENSING MODE ISOLATION				
a. RHR Equipment Area Δ Temperature - High	NA	Q	Q	1, 2, 3
b. RHR Area Cooler Temperature - High	NA	Q	Q	1, 2, 3
c. RHR Heat Exchanger Steam Supply Flow - High	NA	Q	Q	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
6. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION				
a. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2, 3
b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	NA	Q	Q	1, 2, 3
c. RHR Pump Suction Flow - High	NA	Q	Q	1, 2, 3
d. RHR Area Temperature - High	NA	Q	Q	1, 2, 3
e. RHR Equipment Area ΔT - High	NA	Q	Q	1, 2, 3
B. MANUAL INITIATION				
1. Inboard Valves	NA	R	NA	1, 2, 3
2. Outboard Valves	NA	R	NA	1, 2, 3
3. Inboard Valves	NA	R	NA	1, 2, 3 and **,#
4. Outboard Valves	NA	R	NA	1, 2, 3 and **,#
5. Inboard Valves	NA	R	NA	1, 2, 3
6. Outboard Valves	NA	R	NA	1, 2, 3
7. Outboard Valve	NA	R	NA	1, 2, 3

*When reactor steam pressure > 1043 psig and/or any turbine stop valve is open.
**When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.
#During CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

TABLE 3.3.3-1 (Continued)
EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION[a]	APPLICABLE OPERATIONAL CONDITIONS	ACTION
C. DIVISION 3 TRIP SYSTEM			
1. HPCS SYSTEM			
a. Reactor Vessel Water Level - Low, Low, Level 2	4[b]	1, 2, 3, 4*, 5*	35
b. Drywell Pressure - High	4[b]	1, 2, 3	35
c. Reactor Vessel Water Level-High, Level 8	2[c]	1, 2, 3, 4*, 5*	32
d. Deleted			
e. Deleted			
f. Pump Discharge Pressure-High (Bypass)	1	1, 2, 3, 4*, 5*	31
g. HPCS System Flow Rate-Low (Permissive)	1	1, 2, 3, 4*, 5*	31
h. Manual Initiation	1/division	1, 2, 3, 4*, 5*	34

D. LOSS OF POWER

	TOTAL NO. OF INSTRUMENTS	INSTRUMENTS TO TRIP	MINIMUM OPERABLE INSTRUMENTS[d]	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	2/bus	2/bus	2/bus	1, 2, 3, 4**, 5**	37

TABLE NOTATION

(a) A channel/instrument may be placed in an inoperable status for up to 6 hours during periods of required surveillance without placing the trip system/channel/instrument in the tripped condition provided at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter.
(b) Also actuates the associated division diesel generator.
(c) Provides signal to close HPCS pump discharge valve only on 2-out-of-2 logic.
(d) A channel/instrument may be placed in an inoperable status for up to 2 hours during periods of required surveillance without placing the trip system/channel/instrument in the tripped condition provided at least one other OPERABLE channel/instrument in the same trip system is monitoring that parameter.
* Applicable 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 $\leq$ 122 psig.

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 requirement:

a. With one channel inoperable, place the inoperable channel in the tripped condition within 24 hours or declare the associated system inoperable.

b. With more than one channel inoperable, declare the associated system inoperable.

ACTION 31 - 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 24 hours; restore the inoperable channel to OPERABLE status within 7 days or declare the associated system inoperable.

ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, declare the associated ADS trip system or ECCS inoperable within 24 hours.

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

ACTION 34 - 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 trip system or ECCS inoperable.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement

a. For one trip system, place that trip system in the tripped condition within 24 hours or declare the HPCS system inoperable.

b. For both trip systems, declare the HPCS system inoperable.

ACTION 36 - Deleted

ACTION 37 - With the number of OPERABLE instruments less than the Minimum Operable Instruments, place the inoperable instrument(s) in the tripped condition within 1 hour or declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2 as appropriate.

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION
ACTION

ACTION 38 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement:

a. With one channel inoperable, remove the inoperable channel within 24 hours; restore the inoperable channel to OPERABLE status within 7 days or declare the associated ECCS systems inoperable.

b. With both channels inoperable, restore at least one channel to OPERABLE status within one hour or declare the associated ECCS system inoperable.

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	1, 2, 3, 4*, 5*
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. LPCS Pump Discharge Flow-Low	NA	Q	Q	1, 2, 3, 4*, 5*
d. LPCS and LPCI A Injection Valve Injection Line Pressure Low Interlock	NA	Q	R	1, 2, 3, 4*, 5*
e. LPCS and LCPI A Injection Valve Reactor Pressure Low Interlock	NA	Q	R	1, 2, 3, 4*, 5*
f. LPCI Pump A Start Time Delay Relay	NA	Q	Q	1, 2, 3, 4*, 5*
g. LPCI Pump A Flow-Low	NA	Q	Q	1, 2, 3, 4*, 5*
h. Manual Initiation	NA	R	NA	1, 2, 3, 4*, 5*
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "A"#				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R	1, 2, 3
b. Drywell Pressure-High	NA	Q	Q	1, 2, 3
c. Initiation Timer	NA	Q	Q	1, 2, 3
d. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2, 3
e. LPCS Pump Discharge Pressure-High	NA	Q	Q	1, 2, 3
f. LPCI Pump A Discharge Pressure-High	NA	Q	Q	1, 2, 3
g. Manual Initiation	NA	R	NA	1, 2, 3
h. Drywell Pressure Bypass Timer	NA	Q	Q	1, 2, 3
i. Manual Inhibit	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 2 TRIP SYSTEM				
1. RHR B AND C (LPCI MODE)				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R	1, 2, 3, 4*, 5*
b. Drywell Pressure - High	NA	Q	Q	1, 2, 3
c. LPCI B and C Injection Valve Injection Line Pressure Low Interlock	NA	Q	R	1, 2, 3, 4*, 5*
d. LPCI Pump B Start Time Delay Relay	NA	Q	Q	1, 2, 3, 4*, 5*
e. LPCI Pump Discharge Flow-Low	NA	Q	Q	1, 2, 3, 4*, 5*
f. Manual Initiation	NA	R	NA	1, 2, 3, 4*, 5*
g. LPCI B and C Injection Valve Reactor Pressure Low Interlock	NA	Q	R	1, 2, 3, 4*, 5*
2. AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B"#				
a. Reactor Vessel Water Level - Low Low Low, Level 1	S	Q	R	1, 2, 3
b. Drywell Pressure-High	NA	Q	Q	1, 2, 3
c. Initiation Timer	NA	Q	Q	1, 2, 3
d. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2, 3
e. LPCI Pump B and C Discharge Pressure-High	NA	Q	Q	1, 2, 3
f. Manual Initiation	NA	R	NA	1, 2, 3
g. Drywell Pressure Bypass Timer	NA	Q	Q	1, 2, 3
h. Manual Inhibit	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 3 TRIP SYSTEM				
1. HPCS SYSTEM				
a. Reactor Vessel Water Level - Low Low, Level 2	S	Q	R	1, 2#, 3, 4*, 5*
b. Drywell Pressure-High	NA	Q	Q	1, 2, 3
c. Reactor Vessel Water Level-High Level 8	S	Q	R	1, 2, 3, 4*, 5*
d. Deleted				
e. Deleted				
f. Pump Discharge Pressure-High	NA	Q	Q	1, 2, 3, 4*, 5*
g. HPCS System Flow Rate-Low	NA	Q	Q	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)	NA	NA	R	1, 2#, 3, 4**, 5**

TABLE NOTATIONS

#Not required to be OPERABLE when reactor steam dome pressure is less than or equal to 122 psig.
*When the system is required to be OPERABLE after being manually realigned, as applicable, per Specification 3.5.2.
**Required when ESF equipment is required to be OPERABLE.

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 recirculation pump trip system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.4.1-2, 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 one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both trip systems, place the inoperable channel(s) in the tripped condition within 24 hours.

c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system and:

   1. If the inoperable channels consist of one reactor vessel water level channel and one reactor vessel pressure channel, place both inoperable channels in the tripped condition within 24 hours, or, if this action will initiate a pump trip, declare the trip system inoperable.

   2. If the inoperable channels include two reactor vessel water level channels or two reactor vessel pressure channels, declare the trip system inoperable.

d. With one trip system inoperable, restore the inoperable trip system to OPERABLE status within 72 hours or be in at least STARTUP within the next 6 hours.

e. With both trip systems inoperable, restore at least one trip system to OPERABLE status within 1 hour or be in at least STARTUP within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.3.4.1.1 Each ATWS recirculation pump trip 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 channel in one trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided that all other channels are OPERABLE.

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	Q

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 greater than or equal to 30% of RATED THERMAL POWER.

ACTION:

a. With an end-of-cycle recirculation pump trip system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values 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 the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both trip systems, place the inoperable channel(s) in the tripped condition within 12 hours.

c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement(s) for one trip system and:

   1. If the inoperable channels consist of one turbine control valve channel and one turbine stop valve channel, place both inoperable channels in the tripped condition within 12 hours.

   2. If the inoperable channels include two turbine control valve channels or two turbine stop valve channels, declare the trip system inoperable.

d. With one trip system inoperable, restore the inoperable trip system to OPERABLE status within 72 hours, otherwise, either:

   1. Increase the MINIMUM CRITICAL POWER (MCPR) Limiting Condition for Operation (LCO) to the EOC-RPT inoperable value per Specification 3.2.3 within the next 1 hour, or

   2. Reduce THERMAL POWER to less than 30% of RATED THERMAL POWER within the next 6 hours.

e. With both trip systems inoperable, restore at least one trip system to OPERABLE status within 1 hour,

   1. Increase the MINIMUM CRITICAL POWER (MCPR) Limiting Condition for Operation (LCO) to the EOC-RPT inoperable value per Specification 3.2.3 within the next 1 hour, or

   2. Reduce THERMAL POWER to less than 30% RATED THERMAL POWER within the next 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 4.3.4.2.1-1.

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

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. The time allotted for breaker arc suppression shall be verified by test at least once per 60 months.

TABLE 3.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

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

(a) A trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided that the other trip system is OPERABLE.
(b) This function shall be automatically bypassed when turbine first stage pressure is less than or equal to 140 psig, equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER.

TABLE 3.3.4.2-2

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
1. Turbine Stop Valve-Closure	≤ 5% closed	≤ 7% closed
2. Turbine Control Valve - Fast Closure	≥ 500 psig	≥ 414 psig

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 a RCIC system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values 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 and simulated automatic operation of all channels shall be performed at least once per 18 months.

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTIONAL UNITS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM[a]	ACTION
a. Reactor Vessel Water Level - Low Low, Level 2	2	50
b. Reactor Vessel Water Level - High, Level 8	2[b]	51
c. Manual Initiation	1[c]	52

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

(c) Single channel.

TABLE 3.3.5-1 (Continued)

REACTOR CORE ISOLATION COOLING SYSTEM
ACTUATION INSTRUMENTATION

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

a. For one trip system, place the inoperable channel in the tripped condition within 24 hours or declare the RCIC system inoperable.

b. For both trip systems, 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, 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	≥ - 50 inches*	≥ - 57 inches*
b. Reactor Vessel Water Level - High, Level 8	≤ 55.5 inches*	≤ 56 inches*
c. Manual Initiation	NA	NA

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

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	NA	Q	R
b. Reactor Vessel Water Level - High, Level 8	S	Q	R
c. Manual Initiation	NA	R	NA

3/4.3.6 CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.6 The control rod withdrawal 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 withdrawal block instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values 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 System requirement, take the ACTION required by Table 3.3.6-1.

SURVEILLANCE REQUIREMENTS

4.3.6 Each of the above required control rod withdrawal 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.

* A channel may be placed in an inoperable status for up to 6 hours for required surveillance (or 12 hours for repair) 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.

TABLE 3.3.6-1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. ROD BLOCK MONITOR[a]			
a. Upscale	2	1*	60
b. Inoperative	2	1*	60
c. Downscale	2	1*	60
2. APRM			
a. Flow Biased Simulated Thermal Power-Upscale	4	1	61
b. Inoperative	4	1, 2, 5	61
c. Downscale	4	1	61
d. Neutron Flux-High	4	2, 5	61
3. SOURCE RANGE MONITORS			
a. Detector not full in[b]	3	2	61
	2	5	61
b. Upscale[c]	3	2	61
	2	5	61
c. Inoperative[c]	3	2	61
	2	5	61
d. Downscale[d]	3	2	61
	2	5	61
4. INTERMEDIATE RANGE MONITORS			
a. Detector not full in[e]	6	2, 5	61
b. Upscale	6	2, 5	61
c. Inoperative	6	2, 5	61
d. Downscale[e]	6	2, 5	61
5. SCRAM DISCHARGE VOLUME			
a. Water Level-High	2	1, 2, 5**	62
b. Scram Discharge Volume Switch in Bypass	1	5**	62
6. RECIRCULATION FLOW UNIT			
a. Upscale	2	1	62
b. Inoperative	2	1	62
c. Comparator	2	1	62

TABLE 3.3.6-1 (Continued)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

ACTION

ACTION 60 - Declare the RBM inoperable and take the ACTION required by Specification 3.1.4.3.

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 one 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 12 hours.

NOTE

* With THERMAL POWER ≥ 30% of RATED THERMAL POWER.

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

a. The RBM shall be automatically bypassed when a peripheral control rod is selected.

b. This function shall be automatically bypassed if detector count rate is ≥ 100 cps or the IRM channels are on range 3 or higher.

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

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

e. This function shall be automatically bypassed when the IRM channels are on range 1.

TABLE 4.3.6-1

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION[a]	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
1. ROD BLOCK MONITOR				
a. Upscale	N.A.	S/U[b][c],Q[c]	Q	1*
b. Inoperative	N.A.	S/U[b][c],Q[c]	N.A.	1*
c. Downscale	N.A.	S/U[b][c],Q[c]	Q	1*
2. APRM				
a. Flow Biased Simulated Thermal Power-Upscale	N.A.	S/U[b],Q	SA	1
b. Inoperative	N.A.	S/U[b],Q	N.A.	1, 2, 5
c. Downscale	N.A.	S/U[b],Q	SA	1
d. Neutron Flux-High	N.A.	S/U[b],Q	SA	2***, 5
3. SOURCE RANGE MONITORS				
a. Detector not full in	N.A.	S/U[b],W	N.A.	2***, 5
b. Upscale	N.A.	S/U[b],W	Q	2***, 5
c. Inoperative	N.A.	S/U[b],W	N.A.	2***, 5
d. Downscale	N.A.	S/U[b],W	Q	2***, 5
4. INTERMEDIATE RANGE MONITORS				
a. Detector not full in	N.A.	S/U[b],W	N.A.	2***, 5
b. Upscale	N.A.	S/U[b],W	Q	2***, 5
c. Inoperative	N.A.	S/U[b],W	N.A.	2***, 5
d. Downscale	N.A.	S/U[b],W	Q	2***, 5
5. SCRAM DISCHARGE VOLUME				
a. Water Level-High	N.A.	Q	R	1, 2, 5**
b. Scram Discharge Volume Switch in Bypass	N.A.	Q	N.A.	5**
6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW				
a. Upscale	N.A.	S/U[b],Q	Q	1
b. Inoperative	N.A.	S/U[b],Q	N.A.	1
c. Comparator	N.A.	S/U[b],Q	Q	1

TABLE 4.3.6-1 (Continued)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

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

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

(c) Includes reactor manual control multiplexing system input.

* With THERMAL POWER ≥ 30% of RATED THERMAL POWER.

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

*** The provisions of Specification 4.0.4 are not applicable for a period of 24 hours after entering OPERATIONAL CONDITION 2 or 3 when shutting down from OPERATIONAL CONDITION 1.

TABLE 3.3.7.1-1

RADIATION MONITORING INSTRUMENTATION

INSTRUMENTATION	MINIMUM CHANNELS OPERABLE	APPLICABLE CONDITIONS	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
a. Main Control Room Atmospheric Control System Radiation Monitoring Subsystem	2/intake**	1,2,3,5 and *	3.5 mR/hr	0.1 to 10,000 mR/hr	70

TABLE NOTATIONS

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

** A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition, provided at least one other operable channel in the same Trip System is monitoring that Trip Function.

ACTION STATEMENT

ACTION 70 -

a. With one of the required monitors inoperable, place the inoperable channel in the downscale tripped condition within 1 hour; 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 pressurization mode of operation.

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

TABLE 4.3.7.1-1

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENTATION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
a. Main Control Room Atmospheric Control System Radiation Monitoring Subsystem	S	Q	R	1,2,3,5 and *

NOTES

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

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.8 The feedwater/main turbine trip system actuation instrumentation channels shown in Table 3.3.8-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.8-2.

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

a. With a feedwater/main turbine trip system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.8-2, 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 one less than that required by the Minimum OPERABLE Channels per Trip System requirement:

   1) Within 7 days, either place the inoperable channel in the tripped* condition or restore the inoperable channel to OPERABLE status.

   2) Otherwise, be in at least STARTUP within 6 hours.

c. With the number of OPERABLE channels two less than required by the Minimum OPERABLE Channels per Trip System requirement:

   1) Within two hours place or verify at least one inoperable channel in the tripped* condition, and restore either inoperable channel to OPERABLE status within 72 hours, or,

   2) Be in at least STARTUP within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.3.8.1 Each feedwater/main turbine trip 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 4.3.8.1-1.

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

* An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur.

TABLE 3.3.8-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM
A. Reactor Vessel WAter Level-High, Level 8	3*

* A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition.

TABLE 4.3.8.1-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
a. Reactor Vessel WAter Level-High, Level 8	S	Q	R

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

The reactor protection system automatically initiates a reactor scram to:

a. Preserve the integrity of the fuel cladding.

b. Preserve the integrity of the reactor coolant system.

c. Minimize the energy which must be adsorbed following a loss-of-coolant accident, and

d. Prevent inadvertent criticality.

This specification provides the limiting conditions for operation necessary to preserve the ability of the system to perform its intended function even during periods when instrument channels may be out of service because of maintenance. When necessary, one channel may be made inoperable for brief intervals to conduct required surveillance.

The reactor protection system is made up of two independent trip systems. There are usually four channels to monitor each parameter with two channels in each trip system. The outputs of the channels in a trip system are combined in a logic so that either channel will trip that trip system. The tripping of both trip systems will produce a reactor scram. The system meets the intent of IEEE-279, 1971, for nuclear power plant protection systems. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System", March 1988 and MDE-83-0485 Revision 3, "Technical Specification Improvement Analysis for the Reactor Protection System for LaSalle County Station, Units 1 and 2", April 1991. The bases for the trip settings of the RPS are discussed in the bases for Specification 2.2.1. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains RPS trip capability.

The measurement of response time at the specified frequencies provides assurance that the protective functions associated with each channel are completed within the time limit assumed in the accident analysis. No credit was taken for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping or total channel test measurement, provided such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either (1) in place, onsite or offsite test measurements, or (2) utilizing replacement sensors with certified response times.

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

This specification ensures the effectiveness of the instrumentation used to mitigate the consequences of accidents by prescribing the OPERABILITY trip setpoints and response times for isolation of the reactor systems. When necessary, one channel may be inoperable for brief intervals to conduct required surveillance. Both channels of each trip system for the main steam tunnel ambient temperature and ventilation system differential temperature may be placed in an inoperable status for up to 4 hours for required reactor building ventilation system maintenance and testing and 12 hours for the required secondary containment Leak Rate test without placing the trip system in the tripped condition. This will allow for maintaining the reliability of the ventilation system and secondary containment. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analyses for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation", March 1989, and with NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation", July 1990. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains primary containment isolation capability. Some of the trip settings may have tolerances explicitly stated where both the high and low values are critical and may have a substantial effect on safety. The setpoints of other instrumentation, where only the high or low end of the setting have a direct bearing on safety, are established at a level away from the normal operating range to prevent inadvertent actuation of the systems involved.

Except for the MSIVs, the safety analysis does not address individual sensor response times or the response times of the logic systems to which the sensors are connected. For A.C. operated valves, it is assumed that the A.C. power supply is lost and is restored by startup of the emergency diesel generators. In this event, a time of 13 seconds is assumed before the valve starts to move. The safety analysis considers an allowable inventory loss which in turn determines the valve speed in conjunction with the 13 second delay.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

The emergency core cooling system actuation instrumentation is provided to initiate actions to mitigate the consequences of accidents that are beyond the ability of the operator to control. This specification provides the OPERABILITY requirements, trip setpoints and response times that will ensure effectiveness of the systems to provide the design protection. Although the instruments are listed by system, in some cases the same instrument may be used to send the actuation signal to more than one system at the same time.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION (continued)

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30936P-A, "Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation)", Parts 1 and 2, December 1988, and RE-025 Revision 1, "Technical Specification Improvement Analysis for the Emergency Core Cooling System Actuation Instrumentation for LaSalle County Station, Units 1 and 2", April 1991. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains ECCS initiation capability.

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

The anticipated transient without scram (ATWS) recirculation pump trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an anticipated transient. The response of the plant to this postulated event falls within the envelope of study events in General Electric Company Topical Report NEDO-10349, dated March 1971 and NEDO-24222, dated December, 1979, and Appendix G of the FSAR.

The end-of-cycle recirculation pump trip (EOC-RPT) system is a part of the Reactor Protection System and is an essential safety supplement to the reactor trip. The purpose of the EOC-RPT is to recover the loss of thermal margin which occurs at the end-of-cycle. The physical phenomenon involved is that the void reactivity feedback due to a pressurization transient can add positive reactivity to the reactor system at a faster rate than the control rods add negative scram reactivity. Each EOC-RPT system trips both recirculation pumps, reducing coolant flow in order to reduce the void collapse in the core during two of the most limiting pressurization events. The two events for which the EOC-RPT protective feature will function are closure of the turbine stop valves and fast closure of the turbine control valves.

A generic analysis, which provides for continued operation with one or both trip systems of the EOC-RPT system inoperable, has been performed. The analysis determined bounding cycle independent MINIMUM CRITICAL POWER RATIO (MCPR) Limiting Condition for Operation (LCO) values which must be used if the EOC-RPT system is inoperable. These values ensure that adequate reactivity margin to the MCPR safety limit exists in the event of the analyzed transient with the RPT function inoperable. The analysis results are further discussed in the bases for Specification 3.2.3.

A fast closure sensor from each of two turbine control valves provides input to the EOC-RPT system; a fast closure sensor from each of the other two turbine control valves provides input to the second EOC-RPT system. Similarly, a position switch for each of two turbine stop valves provides input to one EOC-RPT system; a position switch from each of the other two stop valves provides input to the other EOC-RPT system. For each EOC-RPT system, the sensor relay contacts are arranged to form a 2-out-of-2 logic for the fast closure of turbine control valves and a 2-out-of-2 logic for the turbine stop valves. The operation of either logic will actuate the EOC-RPT system and trip both recirculation pumps.

Each EOC-RPT system may be manually bypassed by use of a keyswitch which is administratively controlled. The manual bypasses and the automatic Operating Bypass at less than 30% of RATED THERMAL POWER are annunciated in the control room.

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION (continued)

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with the following:

1. NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System", March 1988.

2. GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications", December 1992.

When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains the applicable RPT initiation capability.

The EOC-RPT system response time is the time assumed in the analysis between initiation of valve motion and complete suppression of the electric arc, i.e., 190 ms, less the time allotted for sensor response, i.e., 10 ms, and less the time allotted for breaker arc suppression determined by test, as correlated to manufacturer's test results, i.e., 83 ms, and plant pre-operational test results.

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

The reactor core isolation cooling system actuation instrumentation is provided to initiate actions to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without providing actuation of any of the emergency core cooling equipment.

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-2-A, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications (BWR RCIC Instrumentation)", December 1992. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains RCIC initiation capability.

3/4.3.6 CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

The control rod block functions are provided consistent with the requirements of the specifications in Section 3/4.1.4, Control Rod Program Controls. The trip logic is arranged so that a trip in any one of the inputs will result in a control rod block.

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P-A, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation", October 1988, and GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications", December 1992. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains Control Rod Block capability.

3/4.3.7 MONITORING INSTRUMENTATION

3/4.3.7.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring instrumentation ensures that; (1) the radiation levels are continually measured in the areas served by the individual channels, and (2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications", December 1992. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains initiation capability.

3.4.3.7.2 SEISMIC MONITORING INSTRUMENTATION

The OPERABILITY of the seismic monitoring instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the unit. This instrumentation is consistent with the recommendations of Regulatory Guide 1.12 "Instrumentation for Earthquakes", April 1974.

3/4.3.7.3 METEOROLOGICAL MONITORING INSTRUMENTATION

The OPERABILITY of the meteorological monitoring instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public. This instrumentation is consistent with the recommendations of Regulatory Guide 1.23 "Onsite Meteorological Programs," February, 1972.

3/4.3.7.4 REMOTE SHUTDOWN MONITORING INSTRUMENTATION

The OPERABILITY of the remote shutdown monitoring instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT SHUTDOWN of the unit from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

3/4.3.7.11 EXPLOSIVE GAS MONITORING INSTRUMENTATION

This instrumentation provides for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the waste gas holdup system.

3/4.3.7.12 LOOSE-PART DETECTION SYSTEM

The OPERABILITY of the loose-part detection system ensures that sufficient capability is available to detect loose metallic parts in the primary system and avoid or mitigate damage to primary system components. The allowable out-of-service times and surveillance requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors."

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

The feedwater/main turbine trip system actuation instrumentation is provided to initiate the feedwater system/main turbine trip system in the event of reactor vessel water level equal to or greater than the level 8 setpoint associated with a feedwater controller failure, to prevent overfilling the reactor vessel which may result in high pressure liquid discharge through the safety/relief valve discharge lines. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications", December 1992. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains Feedwater System/Main Turbine Trip System actuation capability.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 104 TO FACILITY OPERATING LICENSE NO. NPF-11 AND

AMENDMENT NO. 90 TO FACILITY OPERATING LICENSE NO. NPF-18

COMMONWEALTH EDISON COMPANY

LASALLE COUNTY STATION, UNITS 1 AND 2

DOCKET NOS. 50-373 AND 50-374

1.0 INTRODUCTION

By letter dated December 14, 1994, Commonwealth Edison Company (ComEd, the licensee) requested an amendment to Facility Operating Licenses No. NPF-11 and NPF-18 for LaSalle County Station, Units 1 and 2. The proposed amendments would revise technical specifications (TSs) related to allowed outage times (AOT) and surveillance test intervals (STI) for certain actuation instrumentation in the reactor protection system (RPS), primary containment isolation system (PCIS), emergency core cooling system (ECCS), recirculation pump trip, reactor core isolation cooling (RCIC), control rod withdrawal block, monitoring, and feedwater/main turbine trip systems. These changes are generally consistent with General Electric topical reports which have been reviewed and approved by the NRC. The changes also include revising the Feedwater/Main Turbine Trip Limiting Condition for Operation (LCO) 3.3.8 ACTION statement to achieve consistency with existing instrumentation LCOs; deleting the surveillance of the Average Power Range Monitor (APRM) Neutron Flux - High, Setdown functional unit in Operational Condition 1; revising the applicability of the provisions of Specification 4.0.4 to several Reactor Protection System and Control Rod Withdrawal Block Instrumentation surveillance requirements; adding the requirement to perform shiftly channel checks for applicable RPS, PCIS, ECCS, and RCIC instrumentation channels equipped with master trip units; and other changes to correct typographical errors and to delete cycle specific footnotes which are no longer applicable.

2.0 EVALUATION

The majority of the proposed changes revise the STIs and AOTs for certain actuation instrumentation in the reactor protection, isolation, emergency core cooling, control rod withdrawal block, monitoring and feedwater/main turbine trip systems. The proposed changes are based on the NRC staff's previous approvals of the following GE licensing topical reports (LTRs):

1. NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," dated March 1988. This LTR was approved by letter and enclosed safety evaluation dated July 15, 1987, from A. C. Thadani (NRC) to T. A. Pickens (BWR Owners' Group).

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2. NEDC-30851P-A (Supplement 2), "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," dated March 1989. This LTR was approved by letter and enclosed safety evaluation dated January 6, 1989, from C. E. Rossi (NRC) to D. N. Grace (BWR Owners' Group).

3. NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," dated July 1990. This LTR was approved by letter and enclosed safety evaluation dated June 18, 1990, from C. E. Rossi (NRC) to S. D. Floyd (BWR Owners' Group).

4. NEDC-30936P-A, "BWR Owner's Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Part 1," dated December 1988. This LTR was approved by letter and enclosed safety evaluation dated December 9, 1988, from A. C. Thadani (NRC) to D. N. Grace (BWR Owners' Group).

5 NEDC-30936P-A, "BWR Owner's Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Part 2," dated December 1988. This LTR was approved by letter and enclosed safety evaluation dated December 9, 1988, from C. E. Rossi (NRC) to D. N. Grace (BWR Owners' Group).

6. GENE-770-06-2, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," dated February 1991. This LTR was approved by letter and enclosed safety evaluation dated September 13, 1991, from C. E. Rossi (NRC) to G. J. Beck (BWR Owners' Group).

7. NEDC-30851P-A (Supplement 1), "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation," dated October 1988. This LTR was approved by letter and enclosed safety evaluation dated September 22, 1988, from C. E. Rossi (NRC) to D. N. Grace (BWR Owners' Group).

8. GENE-770-06-1, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," dated February 1991. This LTR was approved by letter and enclosed safety evaluation dated July 21, 1992, from C. E. Rossi (NRC) to R. D. Bing IV (BWR Owners' Group).

Each of the above LTRs was prepared and approved on a generic basis with requirements for individual licensees to perform plant-specific evaluations to demonstrate that the LTRs are applicable to plant-specific license amendment requests. The licensee has performed the required plant-specific evaluations for LaSalle County Station, Units 1 and 2. These evaluations are discussed below:

1. NEDC-30851P-A identifies LaSalle, a GE BWR-5 product line reactor with a Mark II containment, as a participating plant in the development of this

LTR. The licensee's December 14, 1994, submittal included proprietary and non-proprietary versions of GE Report MDE-83-0485, Revision 3, "Technical Specification Improvement Analysis for the Reactor Protection System for LaSalle County Station, Units 1 and 2", April 1991, which concluded that differences between LaSalle and the assumptions in the generic analysis are not significant and that the generic analysis in NEDC-30851P-A is applicable to LaSalle. The licensee's submittal stated that the applicability of the analyses was not adversely impacted by recent plant modifications. Therefore, the staff concludes that the first condition regarding the use of the LTR has been satisfied for LaSalle.

2. NEDC-30851P-A (Supplement 2) identifies LaSalle as a participating plant in the development of this LTR. Section 3.2 of the LTR specifically analyzes BWR 5/6 plants. The licensee's December 14, 1994, submittal stated that the applicability of the analyses had been confirmed and was not adversely impacted by recent plant modifications. Therefore, the staff finds that NEDC-30851P-A (Supplement 2) is applicable to LaSalle and, provided other conditions are satisfied, may be used to justify plant specific TS changes.

3. NEDC-31677P-A identifies LaSalle as a participating plant in the development of this LTR. Section 5.2 and Appendix C2 of the LTR specifically analyze BWR 5/6 plants. The licensee's December 14, 1994, submittal stated that the applicability of the analyses had been confirmed and was not adversely impacted by recent plant modifications. Therefore, the staff finds that NEDC-31677P-A is applicable to LaSalle and, provided other conditions are satisfied, may be used to justify plant specific TS changes.

4. Part 1 of NEDC-30936P-A identifies LaSalle as a participating plant in the development of this LTR. The licensee's December 14, 1994, submittal included proprietary and non-proprietary versions of GE Report RE-025, Revision 1, "Technical Specification Improvement Analysis for the Emergency Core Cooling System Actuation Instrumentation for LaSalle County Station, Units 1 and 2," April 1991, which concludes that the differences between LaSalle and the assumptions of the generic analysis are not significant and that the generic analyses in NEDC-30936P-A, Parts 1 and 2, are applicable to LaSalle. The licensee's December 14, 1994, submittal stated that the applicability of the analyses was not adversely impacted by recent plant modifications. Therefore, the staff concludes that the first condition for use of NEDC-30936P-A, Part 1, has been satisfied for LaSalle.

5. Part 2 of NEDC-30936P-A identifies LaSalle as a participating plant in the development of this LTR. Section 5.5 of the LTR specifically analyzes BWR 5/6 plants. Furthermore, as noted above, GE Report RE-025, Revision 1, also concludes that the generic analyses in NEDC-30936P-A are applicable to LaSalle. The licensee's December 14, 1994, submittal stated that the applicability of the analyses was not adversely

impacted by recent plant modifications. Therefore, the staff concludes that the first condition for use of NEDC-30936P-A, Part 2, has been satisfied for LaSalle.

6. GENE-770-06-1 identifies application of changes to surveillance test intervals and allowed out-of-service times for selected instrumentation for all BWR plants. The licensee's December 14, 1994, submittal stated that an evaluation was performed to verify the applicability of the analyses, including the potential impact of recent plant modifications, and it was determined that the generic analyses are valid for LaSalle. Therefore, the staff concludes that GENE-770-06-1 is an appropriate reference for the justification of certain plant specific TS changes for LaSalle.

7. GENE-770-06-2 addressed TS changes for BWR 5/6 plants such as LaSalle. The licensee's December 14, 1994, submittal stated that an evaluation was performed to verify the applicability of the analyses, including the potential impact of recent plant modifications, and it was determined that the generic analyses are valid for LaSalle. Therefore, the staff concludes that GENE-770-06-2 may be used as part of the justification of plant specific TS changes for LaSalle.

8. NEDC-30851P-A (Supplement 1) identifies LaSalle as a participating plant in the development of this LTR. Section 4 of the LTR addresses BWR-5 plants such as LaSalle. The licensee's December 14, 1994, submittal stated that the applicability of the analyses had been confirmed and was not adversely impacted by recent plant modifications. Therefore, the staff concludes that the first condition for use of NEDC-30851P-A (Supplement 1) has been satisfied for LaSalle.

Each of the above LTRs also contains requirements for licensees to demonstrate that the drift characteristics for the applicable instrumentation are bounded by the assumptions used in the LTRs when the functional test interval is extended from monthly to quarterly. The LaSalle setpoint calculations assumed 18-month trip unit calibration intervals and, therefore, are not affected by the changes proposed in the licensee's amendment request. In addition, sensor calibration intervals for the LaSalle instrumentation addressed by the LTRs were verified by the licensee to be equal to or longer than once per quarter and are, therefore, unaffected by the proposed changes. The licensee has concluded that the drift characteristics of the involved instrumentation are not impacted by the extension of functional test intervals since calibration frequencies are not changed from their current quarterly or refueling outage interval. The staff finds that the licensee has adequately addressed the conditional approval of the LTRs as it relates to the concern of instrument drift. This finding is consistent with the clarification regarding instrument drift allowances provided in a letter dated April 27, 1988, from C. E. Rossi (NRC) to R. F. Janecek (BWR Owners' Group).

NEDC-30851P-A requires licensees confirm that the differences between a plant specific RPS and those of the base case plant modelled in the LTR are

evaluated in a plant-specific analysis using the procedures of Appendix K of the LTR. The plant-specific analysis was documented in GE Report MDE-83-0485, Revision 3. This report utilized the procedures of Appendix K of NEDC-30851P-A to identify and evaluate the RPS differences. The results of this analysis indicated that while the LaSalle and base case RPS configurations have several differences, the differences do not have a significant impact on the generic conclusions. The staff concludes that the licensee has satisfied the requirement of NEDC-30851P-A to evaluate the RPS configuration differences and that those differences do not adversely impact the applicability of the topical report to LaSalle.

The GE Report RE-025, Revision 1, was included in the submittal and included a similar evaluation of the LaSalle ECCS as compared to the generic analyses of NEDC-30936P-A. As with the RPS, several differences were identified between the base case and LaSalle. The evaluation determined that those differences did not adversely impact the applicability of the ECCS actuation instrumentation STI and AOT extensions to LaSalle.

Several suggested changes included in the LTRs were previously incorporated into the LaSalle, Units 1 and 2, TS by Amendment Nos. 95 and 79. These changes included decreasing the channel functional test interval requirement for RPS Functional Unit 12, Manual Scram, from monthly to weekly and increasing the channel functional test interval requirement for Main Steam Line Isolation Valve Closure, Turbine Stop Valve Closure, and Turbine Control Valve Fast Closure Valve Trip System Oil Pressure Low from monthly to quarterly.

Given that the licensee has demonstrated that the conditions for application of the above LTRs have been satisfied, the staff finds that the acceptability of the proposed changes may be determined by ensuring they are consistent with those contained in the LTRs. The staff evaluations of specific proposed changes are as follows:

<u>TS 3/4.3.1 - Reactor Protection System (RPS) Instrumentation</u>

ACTIONS a. and b. for TS 3.3.1 specify actions to be taken in the event that the number of operable RPS instrumentation channels is less than required by TS Table 3.3.1-1. The proposed changes would revise ACTIONS a. and b. to read:

a. With one channel required by Table 3.3.1-1 inoperable in one or more Functional Units, place the inoperable channel and/or that trip system in the tripped condition* within 12 hours.

b. With two or more channels required by Table 3.3.1-1 inoperable in one or more Functional Units:

   1. Within one hour, verify sufficient channels remain OPERABLE or tripped* to maintain trip capability in the Functional Unit, and

2. Within 6 hours, place the inoperable channel(s) in one trip system and/or that trip system** in the tripped condition*, and

3. Within 12 hours, restore the inoperable channels in the other trip system to an OPERABLE status or tripped*.

c. Otherwise, take the ACTION required by Table 3.3.1-1 for the Functional Unit.

*An inoperable channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable channel is not restored to OPERABLE status within the required time, the ACTION required by Table 3.3.1-1 for the Functional Unit shall be taken.

**This ACTION applies to that trip system with the most inoperable channels; if both trip systems have the same number of inoperable channels, the ACTION can be applied to either trip system.

The proposed changes to ACTIONS a. and b. for TS 3.3.1 would increase and clarify the time permitted to place an inoperable RPS instrumentation channel in the tripped condition when the number of operable channels is less than required. These changes are consistent with NEDC-30851P-A and with current NRC staff positions and related guidance provided in NUREG-1434 to ensure that a loss of function will not exist if two or more channels are inoperable. The staff finds the changes acceptable.

The proposed change to Table Notation (a) on TS Table 3.3.1-1 would revise the allowable time a channel may be inoperable for the purpose of performing required surveillances without placing the channel in the tripped condition provided at least one operable channel in the same trip system is monitoring that parameter. The allowed time is changed from 2 hours to 6 hours. This proposed change is consistent with the provisions of NEDC-30851P-A and is, therefore, acceptable.

The proposed changes included in the licensee's December 14, 1994, submittal included revising the channel functional test interval for the following Functional Units from weekly or monthly to quarterly:

2.b Average Power Range Monitor Flow Biased Simulated Thermal Power Upscale
2.c Average Power Range Monitor Fixed Neutron Flux - Upscale
2.d Average Power Range Monitor Inoperative
3 Reactor Vessel Steam Dome Pressure - High
4 Reactor Vessel Water Level - Low, Level 3
6 Main Steam Line Radiation - High
7 Drywell Pressure - High
8 Scram Discharge Volume Water Level - High

The proposed changes to the above STIs in TS Table 4.3.1.1-1 are consistent with previously reviewed and approved LTR NEDC-30851P-A and the plant specific verifications in MDE-78-0485 and are, therefore, acceptable.

In addition to the above changes related to STI extensions, the licensee has proposed to revise the channel check requirements for functional unit 4, Reactor Vessel Water Level - Low, Level 3, from NA (not applicable) to once per shift. This change results from LaSalle installing analog instrumentation to replace static-o-ring (SOR) switches for reactor vessel level determination in the RPS, PCIS, ECCS, and RCIC systems. The SOR switches previously used for reactor vessel water level applications were not equipped with an indicator which would permit the performance of a channel check. The master trip units are now equipped with indicators which permit performing instrumentation channel checks. The requirement to perform this task is not stated in the TSs. A requirement to perform a shiftly channel check may now be added to the TSs for the applicable RPS, PCIS, ECCS, and RCIC instrumentation channels equipped with master trip units. The staff finds the addition of the channel check requirement improves the reliability of the channel and is, therefore, acceptable.

The licensee has proposed to revise TS Table 4.3.1.1-1, functional unit 1, Intermediate Range Monitors, and functional unit 2, APRM, by the addition of a footnote to operational conditions 2 and 3. The footnote states that:

> "The provisions of Specification 4.0.4 are not applicable for a period of 24 hours after entering OPERATIONAL CONDITION 2 or 3 when shutting down from OPERATIONAL CONDITION 1."

This change is intended to provide the plant operators with better guidance for the application of TS 4.0.4. In cases where complete surveillances can not be achieved, such as during a plant shutdown, then the required surveillances will be performed within 24 hours of entering the MODE or condition in which the surveillance is required. The APRM Fixed Neutron Flux - High quarterly function tests most of the APRM channel equipment associated with the APRM Neutron Flux - High, Setdown scram. The APRM Fixed Neutron Flux - High and other RPS functions would also be available to provide protection in the event of a design basis accident or transient. The staff finds the change is generally consistent with the guidance provided in Generic Letter 87-09 which discussed possible conflicts associated with TS surveillances and

changes in operational conditions, and with previously issued amendments and NUREG-1434. The staff finds the addition of the footnote acceptable.

The licensee has also proposed to delete Operational Condition 1 from the list of applicable conditions for the requirements of the APRM Fixed Flux - High, Setdown (functional unit 2.a). This is proposed in order to make Table 4.3.1.1-1 consistent with Table 3.3.1-1 and Bases 2.2.1, Item 2, Average Power Range Monitor. The APRM Neutron Flux - High, Setdown scram setting provides adequate thermal margin between the setpoint and the Safety Limits for operation at low pressure and low flow during plant startup (power ascension). However, upon entering Operational Condition 1, the Setdown function is bypassed and it is not practical to perform a surveillance. Therefore, the staff finds it appropriate to delete the requirement for performing the surveillance in Operational Condition 1.

TS 3/4.3.2 - Isolation Actuation Instrumentation

ACTIONS b. and c. for TS 3.3.2 specify actions to be taken in the event that the number of operable isolation actuation instrumentation channels is less than the minimum required by Table 3.3.2-1. The proposed changes would revise ACTIONS b. and c. to read:

b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System Requirement for one trip system, either

   1. Place the inoperable channel(s) in the tripped condition within

      a) 1 hour for trip functions without an OPERABLE channel,
      b) 12 hours for trip functions common to RPS Instrumentation, and
      c) 24 hours for trip functions not common to RPS Instrumentation.

   or

   2. Take the ACTION required by Table 3.3.2-1.

c. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems,

   1. Place at least one trip system** in the tripped condition*** within one hour, and

   2. a) Place the inoperable channel(s) in the remaining trip system in the tripped condition*** within

1) 1 hour for trip functions without an OPERABLE channel,
2) 12 hours for trip functions common to RPS Instrumentation, and
3) 24 hours for trip functions not common to RPS Instrumentation.

or

b) Take the ACTION required by Table 3.3.2-1.

The proposed changes to ACTIONS b. and c. for TS 3.3.2 would increase and clarify the time permitted to place an inoperable channel in the tripped condition when the number of operable channels is less than required. The revised footnote (*) increases the allowable time from 2 hours to 6 hours to restore an inoperable channel whose placement in the tripped condition would cause the Trip Function to occur. These changes are acceptable since they are consistent with NEDC-30851P-A (Supplement 2) and NEDC-31677P-A and with current NRC staff positions and related guidance provided in NUREG-1434 to ensure that a loss of function will not exist if two or more channels are inoperable.

The proposed change to TS Table 3.3.3-1 note (a) increases the time permitted for an isolation actuation instrumentation channel to be placed in an inoperable status for surveillance purposes without placing the trip system in the tripped condition from 2 to 6 hours. This proposed change is consistent with the provisions of NEDC-30851P-A (Supplement 2) and NEDC-31677P-A and is, therefore, acceptable.

The proposed changes to TS Table 4.3.2.1-1 would increase the channel functional test interval requirement for the following Trip Functions from monthly to quarterly:

1. Primary Containment Isolation
2. Secondary Containment Isolation
3. Reactor Water Cleanup System Isolation
   (except for standby liquid control system initiation which is currently performed on a refueling outage interval)
4. Reactor Core Isolation Cooling System Isolation
5. Residual Heat Removal (RHR) System Steam Condensing Mode Isolation
6. RHR System Shutdown Cooling Mode Isolation

The proposed changes to TS Table 4.3.2.1-1 are consistent with the previously reviewed and approved LTRs NEDC-30851P-A (Supplement 2) and NEDC-31677P-A. The staff finds these changes acceptable.

In addition to the above changes related to STI extensions, the licensee has proposed to revise the channel check requirements for functional units A.1.a.1, PCIS Reactor Vessel Water Level - Low, Level 3; A.1.a.3, PCIS Reactor Vessel Water Level - Low, Low, Low, Level 1; and A.6.a, RHR Shutdown Cooling Mode Isolation, Reactor Vessel Water Level - Low, Level 3, from NA (not

applicable) to once per shift. This change results from LaSalle changing the plant design such that the channel checks are now feasible. Master trip units are now equipped with indicators which permit performing instrumentation channel checks. The requirement to perform this task is not stated in the TSs. A requirement to perform a shiftly channel check may now be added to the TSs for the applicable RPS, PCIS, ECCS, and RCIC instrumentation channels equipped with master trip units. The staff finds the addition of the channel check requirement improves the reliability of the channel and is, therefore, acceptable.

TS 3/4.3.3 - Emergency Core Cooling System Actuation Instrumentation

The current Table Notation (a) on TS Table 3.3.3-1 specifies that an ECCS actuation instrumentation channel may be placed in an inoperable status for up to 2 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. The proposed change to Table Notation (a) would revise the 2 hours to 6 hours. Table Notation (d) is added to address the Loss of Power functional units. The proposed (d) notation is the same as the existing (a) notation and allows 2 hours for restoration of operability without placing the channel in trip. The footnote was added because the generic analyses did not address the loss of power function and, therefore, the licensee maintained the existing limitations.

ACTION 30 on TS Table 3.3.3-1 applies to Reactor Vessel Water Level - Low, Low, Low, Level 1 and Drywell Pressure - High Instrument Channels. The current ACTION 30 requires that if one channel is inoperable and the number of operable channels is less than required by the minimum operable channels per trip function requirement, the inoperable channel must be placed in the tripped condition within 1 hour or the associated system must be declared inoperable. The proposed change to ACTION 30 would extend the 1 hour to 24 hours.

ACTION 31 on TS Table 3.3.3-1 applies to Low Pressure Core Spray (LPCS) Pump Discharge Flow - Low (Bypass), Low Pressure Coolant Injection (LPCI) Pump Discharge Flow - Low (Bypass), High Pressure Core Spray (HPCS) System Flow Rate - Low (Bypass), and HPCS Pump Discharge Pressure - High (Bypass) channels. The current ACTION 31 requires that if the number of operable channels is less than required by the minimum operable channels per trip function requirement, the inoperable channel must be placed in the tripped condition within 1 hour and restored to operable status within 7 days or the associated system must be declared inoperable. The proposed change to ACTION 31 would extend the 1 hour to 24 hours.

ACTION 32 on TS Table 3.3.3-1 applies to LPCS and LPCI Injection Valve Injection Line Pressure - Low (Permissive), LPCI Pump Start Time Delay Relay, ADS (Automatic Depressurization System) Initiation Timer, Reactor Vessel Water Level - Low, Level 3 (Permissive), LPCS Pump Discharge Pressure - High (Permissive), LPCI Pump Discharge Pressure - High (Permissive), Drywell Pressure Bypass Timer, and Reactor Vessel Water Level - High, Level 8

channels. The current ACTION 32 requires that if the number of operable channels is less than required by the minimum operable channels per trip function requirement, the associated ADS trip system or ECCS must be declared inoperable. The proposed change to ACTION 32 would provide a period of 24 hours before the associated ADS trip system or ECCS must be declared inoperable.

ACTION 33 on TS Table 3.3.3-1 applies to LPCS and LPCI Injection Valve Permissive channels during operational conditions 4 and 5. The current ACTION 33 requires that if the number of operable channels is less than required by the minimum operable channels per trip function requirement, the inoperable channel must be placed in the tripped condition with 1 hour. The proposed change to ACTION 33 would extend the 1 hour to 24 hours.

ACTION 34 on TS Table 3.3.3-1 applies to the ECCS Manual Initiation and ADS manual initiation and manual inhibit channels. The current ACTION 34 requires that if the number of operable channels is less than required by the minimum operable channels per trip function requirement, the inoperable channel must be restored to operable status within 8 hours or the associated ADS trip system or ECCS must be declared inoperable. The proposed change to ACTION 34 would extend the 8 hours to 24 hours.

ACTION 35 on TS Table 3.3.3-1 applies to the Reactor Vessel Water Level - Low, Low, Level 2 and Drywell Pressure - High channels that actuate HPCS. The current ACTION 35 requires that if the number of operable channels is less than required by the minimum operable channels per trip function requirement for one trip system, that trip system must be placed in the tripped condition within 1 hour or the HPCS system must be declared inoperable. The proposed change to ACTION 35 would extend the 1 hour to 24 hours.

ACTION 38 on TS Table 3.3.3-1 applies to the LPCS and LPCI Injection Valve Reactor Pressure - Low (Permissive) channels during operational conditions 1, 2 and 3. The current ACTION 38 requires that with one channel inoperable, remove the inoperable channel within one hour and restore the inoperable channel within 7 days or declare the associated ECCS systems inoperable. The proposed change to ACTION 38 would extend the 1 hour to 24 hours.

The proposed changes to TS Table 3.3.3-1 are acceptable since they are consistent with the previously reviewed and approved LTR NEDC-30936P-A (Part 2), the plant specific analysis in RE-025, Revision 1, and with current NRC staff positions and related guidance provided in NUREG-1434 to ensure that a loss of function will not exist if two or more channels are inoperable.

The proposed changes to TS Table 4.3.3.1-1 would extend the channel functional test interval requirement from monthly to quarterly for the trip functions listed below. The ECCS and ADS Manual Initiation and ADS Manual Inhibit channels remain on a refueling outage interval for channel functional testing. The calibration frequencies remain on either a quarterly or refueling outage interval.

a. Division I Trip System - (Trip Function A.)
b. Division II Trip System - (Trip Function B.)
c. Division III Trip System - (Trip Function C.)

The proposed changes to TS Table 4.3.3.1-1 are consistent with the previously reviewed and approved LTRs NEDC-30936P-A (Parts 1 and 2) and the plant specific analysis provided in RE-025, Revision 1. The staff finds these changes acceptable.

In addition to the above changes related to STI extensions, the licensee has proposed to revise the channel check requirements for ECCS actuation instrumentation functional units related to Reactor Vessel Water Level -Low, Low, Low, Level 1 and Reactor Vessel Water Level - Low, Level 3. The requirements are changed from NA (not applicable) to once per shift. This change results from LaSalle changing the plant design such that the channel checks are now feasible. Master trip units are now equipped with indicators which permit performing instrumentation channel checks. The requirement to perform this task is not currently stated in the TSs. A requirement to perform a shiftly channel check may now be added to the TSs for the applicable RPS, PCIS, ECCS, and RCIC instrumentation channels equipped with master trip units. The staff finds the addition of the channel check requirement improves the reliability of the channel and is, therefore, acceptable.

TS 3/4.3.4 - Recirculation Pump Trip Actuation Instrumentation

ACTION b. for TS 3.3.4.1 currently requires that the inoperable channel(s) be placed in the tripped condition within 1 hour if the number of operable anticipated transient without scram recirculation pump trip (ATWS-RPT) system channels is one less than required by the minimum operable channels per trip system requirement for one or both trip systems. The proposed change to ACTION b. would extend the 1 hour period to 24 hours.

ACTION c.1. for TS 3.3.4.1 currently requires that both inoperable channels be placed in the tripped condition within 1 hour if the minimum number of operable ATWS-RPT system channels is two or more less than required by the minimum operable channels per trip system requirement for one trip system and the inoperable channels consist of one reactor vessel water level channel and one reactor vessel pressure channel. The proposed change to Action c.1. would extend the 1 hour period to 24 hours. Notation (a) for TS Table 3.3.4.1-1 currently allows one channel in one trip system to be placed in an inoperable status for up to 2 hours for required surveillance provided that all other channels are operable. The proposed change would extend the 2 hours to 6 hours.

The proposed changes to TS 3.3.4.1 and TS Table 3.3.4.1-1 are consistent with the previously reviewed and approved LTR GENE-770-06-1 and are, therefore, acceptable.

The proposed revisions to TS Table 4.3.4.1-1 would change the channel functional test interval requirement from monthly to quarterly for the following trip functions:

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

The proposed changes to TS Table 4.3.4.1-1 are consistent with the previously reviewed and approved LTR GENE-770-06-1 and are, therefore, acceptable.

ACTION b. for TS 3.3.4.2 currently requires that the inoperable end-of-cycle recirculation pump trip (EOC-RPT) instrumentation channel(s) be placed in the tripped condition within 1 hour if the number of operable channels is one less than required by the minimum operable channels per trip system requirement for one or both trip systems. The proposed change to ACTION b. would extend the 1 hour for placing the inoperable channel(s) in the tripped condition to 12 hours.

ACTION c.1. for TS 3.3.4.2 currently requires that both inoperable channels be placed in the tripped condition within 1 hour if the number of operable EOC-RPT channels is two or more less than required by the minimum operable channels per trip system requirement for one trip system and if the inoperable channels consist of one turbine control valve channel and one turbine stop valve channel. The proposed change to ACTION c.1. would extend the 1 hour period to 12 hours.

The proposed change to the footnote (a) on Table 3.3.4.2-1 would extend the amount of time that an EOC-RPT trip system may be placed in an inoperable status for required surveillance from 2 hours to 6 hours.

The proposed changes to TS 3.3.4.2 and TS Table 3.3.4.2-1 are consistent with the previously reviewed and approved LTR GENE-770-06-1 and are, therefore, acceptable.

<u>TS 3/4.3.5 - Reactor Core Isolation Cooling System Actuation Instrumentation</u>

Table Notation (a) on TS Table 3.3.5-1 currently permits a RCIC system actuation instrument channel to be placed in an inoperable status for up to 2 hours for required surveillance. The proposed change to Notation (a) would extend the 2 hours to 6 hours.

ACTION 50 on TS Table 3.3.5-1 applies to the Reactor Vessel Water Level - Low, Low, Level 2 instrumentation functional units. ACTION 50 currently specifies that the inoperable channel must be placed in the tripped condition within 1 hour or the RCIC system must be declared inoperable if the number of operable channels for one trip system is less than required by the minimum operable channels per trip system requirement. The proposed change to ACTION 50 would extend the 1 hour to 24 hours.

ACTION 51 on TS table 3.3.5-1 applies to the Reactor Vessel Water Level - High, Level 8 instrumentation functional units. ACTION 51 currently specifies that the RCIC system be declared inoperable if the number of operable channels is less than the minimum operable channels per trip system requirement. The proposed change incorporates a 24 hour allowable time period in which to declare the RCIC system inoperable.

ACTION 52 on TS Table 3.3.5-1 applies to the Manual Initiation RCIC instrumentation functional unit. ACTION 52 currently specifies that the inoperable channel must be restored to operable status within 8 hours or the RCIC system must be declared inoperable if the number of operable channels is one less than required by the minimum operable channels per trip system requirement. The proposed change to ACTION 52 would extend the 8 hours to 24 hours.

The proposed changes to TS Table 3.3.5-1 are consistent with the previously reviewed and approved LTR GENE-770-06-2 and are, therefore, acceptable.

The proposed changes to TS Table 4.3.5.1-1 would revise the channel functional test interval requirement for the following RCIC trip functions from monthly to quarterly:

a. Reactor Vessel Water Level - Low, Low, Level 2
b. Reactor Vessel Water Level - High, Level 8

Functional unit (c), Manual Initiation, is maintained with its current refueling outage interval for channel functional testing. Channel calibration intervals are also retained at the current refueling outage intervals.

The proposed changes to TS Table 4.3.5.1-1 are consistent with the previously reviewed and approved GENE-770-06-2 and are, therefore, acceptable.

In addition to the above changes related to STI extensions, the licensee has proposed to revise the channel check requirements for RCIC actuation instrumentation functional unit (b), Reactor Vessel Water Level - High, Level 8. This change results from LaSalle changing the plant design such that the channel checks are now feasible. Master trip units are now equipped with indicators which permit performing instrumentation channel checks. The requirement to perform this task is not currently stated in the TSs. A requirement to perform a shiftly channel check may now be added to the TSs for the applicable RPS, PCIS, ECCS, and RCIC instrumentation channels equipped with master trip units. The staff finds the addition of the channel check requirements improves the reliability of the channels and is acceptable.

<u>TS 3/4.3.6 - Control Rod Withdrawal Block Instrumentation</u>

The licensee has proposed to add a footnote to TS 4.3.6 that would allow a control rod block instrumentation channel to be placed in an inoperable status for up to 6 hours for required surveillance or up to 12 hours for repair without placing the trip system in the tripped condition, provided at least

one other operable channel in the same trip system is monitoring that trip function.

ACTION 62 on TS Table 3.3.6-1 applies to the control rod block trip functions 5., Scram Discharge Volume and 6., Recirculation Flow Unit. ACTION 62 currently specifies that an inoperable channel must be placed in the tripped condition within 1 hour if the minimum number of operable channels is less than required by the minimum operable channels per trip system requirement. The proposed revision to ACTION 62 would change the 1 hour to 12 hours.

The proposed changes to TS 4.3.6 and TS Table 3.3.6-1 are consistent with previously reviewed and approved LTR GENE-770-06-1 and, therefore, acceptable.

The proposed changes to TS Table 4.3.6-1 would modify the channel functional test interval requirement for the following control rod block trip functions from monthly to quarterly:

1. Rod Block Monitor
2. APRM (Average Power Range Monitor)
5.b Scram Discharge Volume - Switch in Bypass
6 Reactor Coolant System Recirculation Flow

The proposed changes to TS Table 4.3.6-1 are consistent with the previously reviewed and approved LTR NEDC-30851P-A (Supplement 1) and are, therefore, acceptable.

The licensee has also proposed a footnote which would apply to control rod withdrawal block functions 2.d, APRM Neutron Flux - High; 3., Source Range Monitors; and 4., Intermediate Range Monitors. The footnote specifies that the provisions of TS 4.0.4 are not applicable for a period of 24 hours after entering operational conditions 2 or 3 when shutting down from operational condition 1. This change is related to the previous discussion of neutron monitors input to the RPS. This footnote is generally consistent with the guidance provided in Generic Letter 87-09 which discussed possible conflicts associated with TS surveillances and changes in operational conditions, and with previously issued amendments and NUREG-1434. The staff finds the addition of the footnote acceptable.

TS 3/4.3.7 - Monitoring Instrumentation

The licensee has proposed to add a Table Notation (e) to TS Table 3.3.7.1-1, Radiation Monitoring Instrumentation. This table notation would apply to the Main Control Room Ventilation Radiation Monitor channels and permit a single channel to 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 the trip function.

The proposed revision to TS Table 4.3.7.1-1 would change the channel functional test interval requirement for the Main Control Room Ventilation Radiation Monitors from monthly to quarterly.

The proposed changes to TS Tables 3.3.7.1-1 and 4.3.7.1-1 are consistent with the previously reviewed and approved LTR GENE-770-06-1 and are, therefore, acceptable.

3/4.3.8 - Feedwater/Main Turbine Trip System Actuation Instrumentation

ACTIONS a, b, and c for TS 3/4.3.8, Feedwater/Main Turbine Trip System Actuation Instrumentation, specifies the requirements for conditions involving inoperable channels of Reactor Vessel Water Level - High, Level 8 instrumentation. The proposed changes would revise the action statements to read:

a. With a feedwater/main turbine trip system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.8-2, 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 one less than that required by the Minimum OPERABLE Channels per Trip System requirement:

   1. Within 7 days, either place the inoperable channel in the tripped* condition or restore the inoperable channel to OPERABLE status.

   2. Otherwise, be in at least STARTUP within 6 hours.

c. With the number of OPERABLE channels two less than required by the Minimum OPERABLE Channels per Trip System requirement:

   1. Within two hours place or verify at least one inoperable channel in the tripped* condition, and restore either inoperable channel to OPERABLE status within 72 hours, or,

   2. Be in at least STARTUP within the next 6 hours.

*An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur.

The revised ACTION Statement a. is primarily an editorial change and, with the changes proposed for ACTIONS b. and c., does not involve any revision of TS requirements or available alternatives. The revised ACTIONS b. and c. allow an inoperable channel to be placed in the tripped condition in lieu of restoring it to operable status. This option had previously been available as part of ACTION a. in regard to channels with a setpoint less conservative than

the value specified in Table 3.3.8-2. The proposed change would also allow tripping a channel in lieu of restoring it for other conditions that render the channel inoperable.

During the 7 day interval in which a channel can be inoperable under the conditions of ACTION b., the remaining two operable channels can provide the required actuation. However, with an inoperable channel, the actuation logic requires both remaining channels and, therefore, the reliability of the system is reduced. The 7 day allowable interval to place the channel in trip or restore its operability provides an acceptably low probability of an initiating event occurring coincident with a failure in the remaining instrument channels. The proposed action requirements are consistent with NUREG-1433. The licensee has maintained the alternative to the above action that would require shutdown to at least the startup operational condition within 6 hours of exceeding the 7 day allowable interval.

ACTION c. addresses the condition in which two channels are inoperable and, therefore, the feedwater and main turbine high water level trip instrumentation is not maintained. The proposed action requires restoration of the function, by placing one of the inoperable channels in the tripped condition within 2 hours. The 2 hour requirement is sufficient for the operator to take corrective action, and takes into account the likelihood of an event requiring actuation of the feedwater and turbine high water level trip during this period. The 2 hour requirement is consistent with NUREG-1433. The licensee has maintained the existing additional requirement to restore either inoperable channel to operable status within 72 hours. In addition, the proposed change also retains the alternative to the above actions that would require shutdown to at least the startup operational mode within 6 hours of exceeding the above allowable intervals.

The applicable footnote to ACTIONS b. and c. states that an inoperable channel need not be placed in the tripped condition where this would cause the trip function to occur. This statement is consistent with the LTRs and previous staff positions such as those contained in NUREG-1433.

The staff finds the proposed revisions to the action requirements to be acceptable.

Table Notation (*) is added to TS Table 3.3.8-1 to allow a Reactor Vessel Water - High, Level 8 instrument channel to be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition. The proposed change to TS Table 4.3.8.1-1 would revise the channel functional test interval requirement for the Feedwater System/Main Turbine Trip system from monthly to quarterly.

The proposed changes to TS Tables 3.3.8-1 and 4.3.8.1-1 are consistent with the previously reviewed and approved LTR GENE-770-06-1 and are, therefore, acceptable.

EDITORIAL CORRECTIONS/CHANGES

The licensee proposed several editorial corrections and deletion of several outdated footnotes as part of the submittal. The staff reviewed these changes and concluded that they were corrections to typographical errors, minor wording changes to improve clarity, or removal of footnotes related to past conditions or operating cycles. The staff included the removal of the footnote related to the February 1995, one-time extension of MSIV Isolation Valve - Closure quarterly surveillance in Unit 2 TS Table 4.3.1.1-1, as one of the editorial corrections. The staff finds these changes acceptable.

The proposed changes would also modify the TS Bases in order to reference the GE LTRs and address the various changes in TS requirements. The NRC staff offers no objection to the proposed Bases changes.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (60 FR 11128). Accordingly, the amendments meet 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 amendments.

5.0 CONCLUSION

The Commission 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: W. Reckley

Date: August 2, 1995