



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. 111  
License No. NPF-11

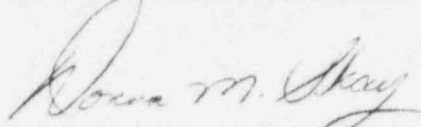
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment filed by the Commonwealth Edison Company (the licensee), dated January 18, 1996, as supplemented by letters dated March 1, March 22, March 26, and April 3, 1996, complies with the standards and 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:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 111, 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 date of issuance and shall be implemented prior to startup from refueling outage L1R07.

FOR THE NUCLEAR REGULATORY COMMISSION



Donna M. Skay, 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: April 4, 1996

ATTACHMENT TO LICENSE AMENDMENT NOS. 111

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.

REMOVE

3/4 3-11  
3/4 3-14a  
3/4 3-15  
3/4 3-18  
3/4 3-20  
B 3/4 3-2

INSERT

3/4 3-11  
3/4 3-14a  
3/4 3-15  
3/4 3-18  
3/4 3-20  
B 3/4 3-2

TABLE 3.3.2-1

## ISOLATION ACTUATION INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>VALVE GROUPS OPERATED BY SIGNAL</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)</u>	<u>APPLICABLE OPERATIONAL CONDITION</u>	<u>ACTION</u>
<u>A. AUTOMATIC INITIATION</u>				
<u>1. PRIMARY CONTAINMENT ISOLATION</u>				
a. Reactor Vessel Water Level				
(1) Low, Level 3	7	2	1, 2, 3	20
(2) Low Low, Level 2	2, 3	2	1, 2, 3	20
(3) Low Low Low, Level 1	1, 10	2	1, 2, 3	20
b. Drywell Pressure - High	2, 7, 10	2	1, 2, 3	20
c. Main Steam Line				
1) Radiation - High	1	2	1, 2, 3	21
	3	2	1, 2, 3	22
2) Pressure - Low	1	2	1	23
3) Flow - High	1	2/line <sup>(d)</sup>	1, 2, 3	21
d. DELETED				
e. Main Steam Line Tunnel ΔTemperature - High	1	2	1 <sup>(i)(j)</sup> , 2 <sup>(i)(j)</sup> , 3 <sup>(i)(j)</sup>	21
f. Condenser Vacuum - Low	1	2	1, 2*, 3*	21
<u>2. SECONDARY CONTAINMENT ISOLATION</u>				
a. Reactor Building Vent Exhaust Plenum Radiation - High	4 <sup>(c)(e)</sup>	2	1, 2, 3 and **	24
b. Drywell Pressure - High	4 <sup>(c)(e)</sup>	2	1, 2, 3	24
c. Reactor Vessel Water Level - Low Low, Level 2	4 <sup>(c)(e)</sup>	2	1, 2, 3, and #	24
d. Fuel Pool Vent Exhaust Radiation - High	4 <sup>(c)(e)</sup>	2	1, 2, 3, and **	24

TABLE 3.3.2-1 (Continued)

NOTES (Continued)

- (g) Requires RCIC steam supply pressure-low coincident with drywell pressure-high.
- (h) Manual initiation isolates 1E51-F008 only and only with a coincident reactor vessel water level-low, level 2, signal.
- (i) Both channels of each trip system may be placed in an inoperable status for up to 4 hours for required reactor building ventilation system corrective maintenance, filter changes, damper cycling and surveillance tests, other than Surveillance Requirement 4.6.5.1.c, without placing the trip system in the tripped condition.
- (j) Both channels of each trip system may be placed in an inoperable status for up to 12 hours due to loss of reactor building ventilation or for performance of Surveillance Requirement 4.6.5.1.c without placing the trip system in the tripped condition.

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
<u>A. AUTOMATIC INITIATION</u>		
<u>1. PRIMARY CONTAINMENT ISOLATION</u>		
a. Reactor Vessel Water Level		
1) Low, Level 3	≥ 12.5 inches*	≥ 11.0 inches*
2) Low Low, Level 2	≥ -50 inches*	≥ -57 inches*
3) Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches*
b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. Main Steam Line		
1) Radiation - High	≤ 3.0 x full power background	≤ 3.6 x full background
2) Pressure - Low	≥ 854 psig	≥ 834 psig
3) Flow - High	≤ 111 psid	≤ 116 psid
d. DELETED		
e. Main Steam Line Tunnel Δ Temperature - High	≤ 65°F	≤ 70°F
f. Condenser Vacuum - Low	> 7 inches Hg vacuum	> 5.5 inches Hg vacuum
<u>2. SECONDARY CONTAINMENT ISOLATION</u>		
a. Reactor Building Vent Exhaust Plenum Radiation - High	≤ 10 mr/hr	≤ 15 mr/hr
b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. Reactor Vessel Water Level - Low Low, Level 2	≥ -50 inches*	≥ -57 inches*
d. Fuel Pool Vent Exhaust Radiation - High	≤ 10 mr/hr	≤ 15 mr/hr
<u>3. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>		
a. Δ Flow - High	≤ 70 gpm	≤ 87.5 gpm
b. Heat Exchanger Area Temperature - High	≤ 181°F	≤ 187°F
c. Heat Exchanger Area Ventilation ΔT - High	≤ 85°F	≤ 91°F
d. SLCS Initiation	NA	NA
e. Reactor Vessel Water Level - Low Low, Level 2	≥ -50 inches*	≥ -57 inches*

TABLE 3.3.2-3

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

<u>TRIP FUNCTION</u>	<u>RESPONSE TIME (Seconds)#</u>
<u>A. AUTOMATIC INITIATION</u>	
<u>1. PRIMARY CONTAINMENT ISOLATION</u>	
a. Reactor Vessel Water Level	
1) Low, Level 3	N/A
2) Low Low, Level 2	N/A
3) Low Low Low, Level 1	≤ 1.0*
b. Drywell Pressure - High	N/A
c. Main Steam Line	
1) Radiation - High(**)	≤ 1.0*
2) Pressure - Low	≤ 2.0*
3) Flow - High	≤ 0.5*
d. DELETED	
e. Condenser Vacuum - Low	N/A
f. Main Steam Line Tunnel ΔTemperature - High	N/A
<u>2. SECONDARY CONTAINMENT ISOLATION</u>	N/A
a. Reactor Building Vent Exhaust Plenum Radiation - High	
b. Drywell Pressure - High	
c. Reactor Vessel Water Level - Low, Level 2	
d. Fuel Pool Vent Exhaust Radiation - High	
<u>3. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>	N/A
a. ΔFlow - High	
b. Heat Exchanger Area Temperature - High	
c. Heat Exchanger Area Ventilation ΔT-High	
d. SLCS Initiation	
e. Reactor Vessel Water Level - Low Low, Level 2	
<u>4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION</u>	N/A
a. RCIC Steam Line Flow - High	
b. RCIC Steam Supply Pressure - Low	
c. RCIC Turbine Exhaust Diaphragm Pressure - High	
d. RCIC Equipment Room Temperature - High	
e. RCIC Steam Line Tunnel Temperature - High	
f. RCIC Steam Line Tunnel ΔTemperature - High	
g. Drywell Pressure - High	
h. RCIC Equipment Room ΔTemperature - High	
<u>5. RHR SYSTEM STEAM CONDENSING MODE ISOLATION</u>	N/A
a. RHR Equipment Area ΔTemperature - High	
b. RHR Area Cooler Temperature - High	
c. RHR Heat Exchanger Steam Supply Flow High	

TABLE 4.3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
<b>A. <u>AUTOMATIC INITIATION</u></b>				
<b>1. <u>PRIMARY CONTAINMENT ISOLATION</u></b>				
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. DELETED				
e. Condenser Vacuum - Low	NA	Q	Q	1, 2*, 3*
f. Main Steam Line Tunnel Δ Temperature - High	NA	Q	R	1, 2, 3
<b>2. <u>SECONDARY CONTAINMENT ISOLATION</u></b>				
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 **
<b>3. <u>REACTOR WATER CLEANUP SYSTEM ISOLATION</u></b>				
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



# INSTRUMENTATION

## BASES

### 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 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 due to loss of reactor building ventilation or 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.



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. 96  
License No. NPF-18

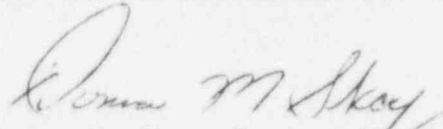
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment filed by the Commonwealth Edison Company (the licensee), dated January 18, 1996, as supplemented by letters dated March 1, March 22, March 26, and April 3, 1996, complies with the standards and 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. 96 , 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 date of issuance and shall be implemented prior to startup from refueling outage L2R07.

FOR THE NUCLEAR REGULATORY COMMISSION



Donna M. Skay, 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: April 4, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 96

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.

REMOVE

3/4 3-11  
3/4 3-14a  
3/4 3-15  
3/4 3-18  
3/4 3-20  
B 3/4 3-2

INSERT

3/4 3-11  
3/4 3-14a  
3/4 3-15  
3/4 3-18  
3/4 3-20  
B 3/4 3-2

TABLE 3.3.2-1

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (b)	APPLICABLE OPERATIONAL CONDITION	ACTION
<u>A. AUTOMATIC INITIATION</u>				
<u>1. PRIMARY CONTAINMENT ISOLATION</u>				
a. Reactor Vessel Water Level				
(1) Low, Level 3	7	2	1, 2, 3	20
(2) Low Low, Level 2	2, 3	2	1, 2, 3	20
(3) Low Low Low, Level 1	1, 10	2	1, 2, 3	20
b. Drywell Pressure - High	2, 7, 10	2	1, 2, 3	20
c. Main Steam Line				
1) Radiation - High	1	2	1, 2, 3	21
2) Pressure - Low	3	2	1, 2, 3	22
3) Flow - High	1	2	1	23
	1	2/line <sup>(d)</sup>	1, 2, 3	21
d. DELETED				
e. Main Steam Line Tunnel ΔTemperature - High	1	2	1 <sup>(i)(j)</sup> , 2 <sup>(i)(j)</sup> , 3 <sup>(i)(j)</sup>	21
f. Condenser Vacuum - Low	1	2	1, 2*, 3*	21
<u>2. SECONDARY CONTAINMENT ISOLATION</u>				
a. Reactor Building Vent Exhaust Plenum Radiation - High	4 <sup>(c)(e)</sup>	2	1, 2, 3 and **	24
b. Drywell Pressure - High	4 <sup>(c)(e)</sup>	2	1, 2, 3	24
c. Reactor Vessel Water Level - Low Low, Level 2	4 <sup>(c)(e)</sup>	2	1, 2, 3, and #	24
d. Fuel Pool Vent Exhaust Radiation - High	4 <sup>(c)(e)</sup>	2	1, 2, 3, and **	24

TABLE 3.3.2-1 (Continued)

NOTES (Continued)

- (g) Requires RCIC steam supply pressure-low coincident with drywell pressure-high.
- (h) Manual initiation isolates 2E51-F008 only and only with a coincident reactor vessel water level-low, level 2, signal.
- (i) Both channels of each trip system may be placed in an inoperable status for up to 4 hours for required reactor building ventilation system corrective maintenance, filter changes, damper cycling and surveillance tests, other than Surveillance Requirement 4.6.5.1.c, without placing the trip system in the tripped condition.
- (j) Both channels of each trip system may be placed in an inoperable status for up to 12 hours due to loss of reactor building ventilation or for performance of Surveillance Requirement 4.6.5.1.c without placing the trip system in the tripped condition.

TABLE 3.3.2-2  
ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
<u>A. AUTOMATIC INITIATION</u>		
<u>1. PRIMARY CONTAINMENT ISOLATION</u>		
a. Reactor Vessel Water Level		
1) Low, Level 3	≥ 12.5 inches*	≥ 11.0 inches*
2) Low Low, Level 2	≥ -50 inches*	≥ -57 inches*
3) Low Low Low, Level 1	≥ -129 inches*	≥ -136 inches*
b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. Main Steam Line		
1) Radiation - High	≤ 3.0 x full power background	≤ 3.6 x full background
2) Pressure - Low	≥ 854 psig	≥ 834 psig
3) Flow - High	≤ 111 psid	≤ 116 psid
d. DELETED		
e. Main Steam Line Tunnel Δ Temperature - High	≤ 65°F	≤ 70°F
f. Condenser Vacuum - Low	> 7 inches Hg vacuum	> 5.5 inches Hg vacuum
<u>2. SECONDARY CONTAINMENT ISOLATION</u>		
a. Reactor Building Vent Exhaust Plenum Radiation - High	≤ 10 mr/h	≤ 15 mr/h
b. Drywell Pressure - High	≤ 1.69 psig	≤ 1.89 psig
c. Reactor Vessel Water Level - Low Low, Level 2	≥ -50 inches*	≥ -57 inches*
d. Fuel Pool Vent Exhaust Radiation - High	≤ 10 mr/h	≤ 15 mr/h
<u>3. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>		
a. ΔFlow - High	≤ 70 gpm	≤ 87.5 gpm
b. Heat Exchanger Area Temperature - High	≤ 181°F	≤ 187°F
c. Heat Exchanger Area Ventilation ΔT - High	≤ 85°	≤ 91°F
d. SLCS Initiation	N.A.	N.A.
e. Reactor Vessel Water Level - Low Low, Level 2	≥ -50 inches*	≥ -57 inches*

TABLE 3.3.2-3

ISOLATION SYSTEM INSTRUMENTATION RESPONSE TIME

<u>TRIP FUNCTION</u>	<u>RESPONSE TIME (Seconds)#</u>
<u>A. AUTOMATIC INITIATION</u>	
<u>1. PRIMARY CONTAINMENT ISOLATION</u>	
a. Reactor Vessel Water Level	
1) Low, Level 3	N/A
2) Low Low, Level 2	N/A
3) Low Low Low, Level 1	≤ 1.0*
b. Drywell Pressure - High	N/A
c. Main Steam Line	
1) Radiation - High(**)	≤ 1.0*
2) Pressure - Low	≤ 2.0*
3) Flow - High	≤ 0.5*
d. DELETED	
e. Condenser Vacuum - Low	N/A
f. Main Steam Line Tunnel ΔTemperature - High	N/A
<u>2. SECONDARY CONTAINMENT ISOLATION</u>	N/A
a. Reactor Building Vent Exhaust Plenum Radiation - High	
b. Drywell Pressure - High	
c. Reactor Vessel Water Level - Low, Level 2	
d. Fuel Pool Vent Exhaust Radiation - High	
<u>3. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>	N/A
a. ΔFlow - High	
b. Heat Exchanger Area Temperature - High	
c. Heat Exchanger Area Ventilation ΔT-High	
d. SLCS Initiation	
e. Reactor Vessel Water Level - Low Low, Level 2	
<u>4. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION</u>	N/A
a. RCIC Steam Line Flow - High	
b. RCIC Steam Supply Pressure - Low	
c. RCIC Turbine Exhaust Diaphragm Pressure - High	
d. RCIC Equipment Room Temperature - High	
e. RCIC Steam Line Tunnel Temperature - High	
f. RCIC Steam Line Tunnel ΔTemperature - High	
g. Drywell Pressure - High	
h. RCIC Equipment Room ΔTemperature - High	
<u>5. RHR SYSTEM STEAM CONDENSING MODE ISOLATION</u>	N/A
a. RHR Equipment Area ΔTemperature - High	
b. RHR Area Cooler Temperature - High	
c. RHR Heat Exchanger Steam Supply Flow High	



TABLE 4.3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
<u>A. AUTOMATIC INITIATION</u>				
<u>1. PRIMARY CONTAINMENT ISOLATION</u>				
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. DELETED				
e. Condenser Vacuum - Low	NA	Q	Q	1, 2*, 3*
f. Main Steam Line Tunnel $\Delta$ Temperature - High	NA	Q	R	1, 2, 3
<u>2. SECONDARY CONTAINMENT ISOLATION</u>				
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 **
<u>3. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>				
a. $\Delta$ 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 $\Delta$ T - 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

## INSTRUMENTATION

### BASES

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#### 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 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 due to loss of reactor building ventilation or 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.