Docket file

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

June 6, 1995

Mr. George A. Hunger, Jr.
Director-Licensing, MC 62A-1
PECO Energy Company
Nuclear Group Headquarters
Correspondence Control Desk
P.O. Box No. 195
Wayne, PA 19087-0195

SUBJECT: TECHNICAL SPECIFICATION CHANGE REQUEST 90-03, PEACH BOTTOM ATOMIC POWER STATION, UNIT NOS. 2 AND 3 (TAC NOS. M90606 AND M90607)

Dear Mr. Hunger:

The Commission has issued the enclosed Amendments Nos. 203 and 206 to Facility Operating License Nos. DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station, Unit Nos. 2 and 3. These amendments consist of changes to the Technical Specifications in response to your application dated September 26, 1994, as supplemented by letters dated January 5, and March 23, 1995.

These amendments extend the surveillance test intervals and allowable out-of service times for the testing and or repair of instrumentation that actuate the Reactor Protection System, Primary Containment Isolation, Core and Containment Cooling systems, Control Rod Blocks, Radiation Monitoring systems and Alternate Rod Insertion/Recirculation Pump Trip.

You are requested to inform the staff when you have implemented the provisions of these amendments. This requirement affects nine or fewer respondents and, therefore, is not subject to the Office of Management and Budget review under P.L. 96-511.

9507050420 950606
PDR ADOCK 05000277
P PDR

NRC FILE CENTER COPY

DF01

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

/S/

Joseph W. Shea, Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-277/50-278

Enclosures:
1. Amendment No. 203 to DPR-44
2. Amendment No. 206 to DPR-56
3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

Docket File	MO'Brien	CGrimes
PUBLIC	JShea	JWermiel
PDI-2 Reading	OGC	ACRS(4)
SVarga	OPA	OC/LFDCB
JZwolinski	GHill(4)	CAnderson, RGN-I
JStolz		

OFC	:PDI-2/LA	:PDI-2/PM	:OGC	:HICB/C	:PDI-2/D	:
NAME	:MO'Brien	:JShea	: R Bachmann	:JWermiel	:JStolz	:6/6/95
DATE	: 5/16/95	:5/17/95	:5/26/95	:5/22/95	: 5/22/95	:

OFFICIAL RECORD COPY FILENAME: g:\SHEA\PEACH\PB90606.AMD

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

Joseph W. Shea, Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-277/50-278

Enclosures:
1. Amendment No. 203 to DPR-44
2. Amendment No. 206 to DPR-56
3. Safety Evaluation

cc w/encls: See next page

cc:

J. W. Durham, Sr., Esquire
Sr. V.P. & General Counsel
PECO Energy Company
2301 Market Street, S26-1
Philadelphia, Pennsylvania 19101

PECO Energy Company
ATTN: Mr. G. R. Rainey, Vice President
Peach Bottom Atomic Power Station
Route 1, Box 208
Delta, Pennsylvania 17314

PECO Energy Company
ATTN: Regulatory Engineer, A4-5S
Peach Bottom Atomic Power Station
Route 1, Box 208
Delta, Pennsylvania 17314

Resident Inspector
U.S. Nuclear Regulatory Commission
Peach Bottom Atomic Power Station
P.O. Box 399
Delta, Pennsylvania 17314

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

Mr. Roland Fletcher
Department of Environment
201 West Preston Street
Baltimore, Maryland 21201

A. F. Kirby, III
External Operations - Nuclear
Delmarva Power & Light Company
P.O. Box 231
Wilmington, DE 19899

Mr. Rich R. Janati, Chief
Division of Nuclear Safety
Pennsylvania Department of
Environmental Resources
P. O. Box 8469
Harrisburg, Pennsylvania 17105-8469

Board of Supervisors
Peach Bottom Township
R. D. #1
Delta, Pennsylvania 17314

Public Service Commission of Maryland
Engineering Division
Chief Engineer
6 St. Paul Centre
Baltimore, MD 21202-6806

Mr. Richard McLean
Power Plant and Environmental
Review Division
Department of Natural Resources
B-3, Tawes State Office Building
Annapolis, Maryland 21401

Mr. John Doering, Chairman
Nuclear Review Board
PECO Energy Company
965 Chesterbrook Boulevard
Mail Code 63C-5
Wayne, Pennsylvania 19087

Dr. Judith Johnsrud
National Energy Committee
Sierra Club
433 Orlando Avenue
State College, PA 16803

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

PECO ENERGY COMPANY

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-277

PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 203
License No. DPR-44

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

   A. The application for amendment by PECO Energy Company, et al. (the licensee) dated September 26, 1994, as supplemented by letters dated January 5, and March 23, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I.

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

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

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

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

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. DPR-44 is hereby amended to read as follows:

9507050425 950606
PDR ADOCK 05000277
P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 203 , are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Donald A. Brinkman

for John F. Stolz, Director
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: June 6, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 203

FACILITY OPERATING LICENSE NO. DPR-44

DOCKET NO. 50-277

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Remove	Insert
35	35
36	36
36a	36a
37	37
38	38
39	39
41	41
42	42
43	43
44	44
45	45
46	46
47	47
51	51
52	52
53	53
53a	53a
55	55
57	57
-	57a
58	58
59	59
-	59a
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
71a	71a
71b	71b
72	72
-	72a
73	73
74	74

ATTACHMENT TO LICENSE AMENDMENT NO.203

FACILITY OPERATING LICENSE NO. DPR-44

DOCKET NO. 50-277

Remove	Insert
74a	74a
75	75
79	79
80	80
81	81
81a	81a
83	83
84	84
85	85
87	87
88	88
89	89
-	89a
91	91
94	94
95	95
96	96
98	98

LIMITING CONDITIONS FOR OPERATION

3.1 Reactor Protection System (RPS)

A. The RPS instrumentation for each trip function in Table 3.1.1 shall be Operable; and, there shall be two Operable or tripped trip systems for each Trip Function.

The designed system response times from the opening of the sensor contact up to and including the opening of the trip actuator contacts shall not exceed 50 milliseconds.

Applicability:

According to Table 3.1.1.

Conditions and Required Actions: (1)(2)

1. With one or more channel(s) required by Table 3.1.1 inoperable in one or more trip functions, place the inoperable channel or associated trip system in trip within 12 hours.

2. With one or more trip functions with one or more channels required by Table 3.1.1 inoperable in both trip systems, place channel in one trip system in trip or place one trip system in trip within 6 hours.

3. With one or more automatic trip functions or two or more manual trip functions (Mode Switch in Shutdown, Manual Scram and RPS Channel Test Switches) with RPS trip capability not maintained, restore RPS trip capability within one hour.

4. If the required actions and associated completion time of Action 1 or 2 or 3 are not met, take the action required by Table 3.1.1 for the Trip Function.

SURVEILLANCE REQUIREMENTS

4.1 Reactor Protection System

A. Each RPS instrument channel shall be demonstrated Operable by performance of a channel functional test and channel calibration at the Frequencies shown in Tables 4.1.1 and 4.1.2, respectively.

Response time measurements (from the opening of the sensor contact up to and including the opening of the trip actuator contacts) are not part of the normal instrument test. The RPS response time of each reactor trip function shall be demonstrated to be within its limits once per operating cycle.

---

(1) When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated trip function maintains RPS trip capability.

(2) 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 3.1.1 for that trip function shall be taken immediately.

LIMITING CONDITIONS FOR OPERATION

3.1 Reactor Protection System (continued)

B. N/A

C. N/A

D. Reactor Protection System Power Supply

D.1 Reactor Protection System Power Supply:

One trip train* per RPS MG set may be in the bypassed or inoperative condition for a period of 72 hours. If this condition cannot be satisfied, or if both trip trains are inoperative, the RPS bus shall be transferred to the alternate source or de-energized within 30 minutes.

D.2 One trip train* of the RPS alternate power supply may be in the bypassed or inoperative condition for a period of 72 hours. If this condition cannot be satisfied, or if both trip trains are inoperative, the RPS bus shall be transferred to the RPS MG set or de-energized within 30 minutes.

SURVEILLANCE REQUIREMENTS

4.1 Reactor Protection System (continued)

B. Deleted

C. Deleted

D. Reactor Protection System Power Supply

D.1 The following RPS power supply (MG set) protective devices shall be functionally tested at least once every six months and calibrated once each refueling outage.

Device	Acceptable Setting
Undervoltage	113 ± 2 Volts
Overvoltage	131 ± 2 Volts
Underfrequency	57 Hz ± .2 Hz
Underfrequency Time Delay	6 sec ± 1 sec

D.2. The following RPS alternate power supply protective devices shall be functionally tested at least once every six months and calibrated once each refueling outage.

Device	Acceptable Setting
Undervoltage	113 ± 2 Volts
Overvoltage	131 ± 2 Volts
Underfrequency	57 Hz ± .2 Hz
Undervoltage Time Delay	Max. 4 secs.

* A trip train consists of one breaker, one undervoltage relay, one overvoltage relay, one underfrequency relay, one time delay relay (MG set only), and the associated logic.

Amendment No. ~~76, 99~~, 203

Intentionally Blank

Table 3.1.1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

Item	Minimum No. of Operable Instrument Channels per Trip System	Trip Function	Trip Level Setting	Modes in which Function Must Be Operable: Refuel (7)	Startup	Run	Number of Instrument Channels Provided by Design	Action (1)
1	1	Mode Switch In Shutdown		x	x	x	1 Mode Switch (4 Sections)	A
2	1	Manual Scram		x	x	x	2 Instrument Channels	A
3	3	IRM High Flux	≤120/125 of Full Scale	x	x	(5)	8 Instrument Channels	A
4	3	IRM Inoperative		x	x	(5)	8 Instrument Channels	A
5	2	APRM High Flux	(0.66W+66%-0.66ΔW) (Clamp @ 120%) (12) (13)			x	6 Instrument Channels	A or B
6	2	APRM Inoperative	(11)	x	x	x	6 Instrument Channels	A or B
7	2	APRM Downscale	≥2.5 Indicated on Scale			(10)	6 Instrument Channels	A or B
8	2	APRM High Flux in Startup	≤15% Power	x	x		6 Instrument Channels	A
9	2	High Reactor Pressure	≤1085 psig	x (9)	x	x	4 Instrument Channels	A
10	2	High Drywell Pressure	≤2 psig	x (8)	x (8)	x	4 Instrument Channels	A
11	2	Reactor Low Water Level	≥0 in. Indicated Level	x	x	x	4 Instrument Channels	A

Table 3.1.1 (continued)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

Item	Minimum No. of Operable Instrument Channels per Trip System	Trip Function	Trip Level Setting	Modes In which Function Must Be Operable: Refuel (7)	Startup	Run	Number of Instrument Channels Provided by Design	Action (1)
12	2	High Water Level in Scram Discharge Volume	≤ 50 Gallons	X (2)	X	X	4 Instrument Channels	A
13	2	Turbine Condenser Low Vacuum	≥ 23 IN. Hg. Vacuum			X	4 Instrument Channels	A or C
14	2	Main Steam Line High Radiation	≤ 15 X Normal Full Power Background	X	X	X	4 Instrument Channels	A
15	8	Main Steam Line Isolation Valve Closure	≤ 10% Valve Closure			X (6)	16 Instrument Channels	A
16	2	Turbine Control Valve Fast Closure	500 (P (850 psig control Oil Pressure Between Fast Closure Solenoid and Disc Dump Valve			X (4)	4 Instrument Channels	A or D
17	4	Turbine Stop Valve Closure	≤ 10% Valve Closure			X (4)	8 Instrument Channels	A or D
18	2	RPS Channel Test Switches		X	X	X	4 Instrument Channels	A

NOTES FOR TABLE 3.1.1

1. If the required actions and associated completion time of Specification 3.1.A, Actions 1 or 2 or 3 are not met, take the action listed below for the affected trip function as required by Table 3.1.1.

   A. Initiate insertion of operable rods and complete insertion of all operable rods within 12 hours.

   B. Reduce power level to IRM range and place mode switch in the start up position within 6 hours.

   C. Reduce turbine load and close main steam line isolation valves within 6 hours.

   D. Reduce power to less than 30% rated within 4 hours.

2. Permissible to bypass, in refuel and shutdown positions of the reactor mode switch.

3. Deleted.

4. Bypassed when turbine first stage pressure is less than that which is equivalent to 30% of rated thermal power.

5. IRM's are bypassed when APRM's are onscale and the reactor mode switch is in the run position.

6. The design permits closure of any two lines without a scram being initiated.

7. When the reactor is subcritical and the reactor water temperature is less than 212 degrees F, only the following trip functions need to be operable:

   A. Mode switch in shutdown

   B. Manual scram

   C. High flux IRM

   D. Scram discharge instrument volume high level

8. Not required to be operable when primary containment integrity is not required.

9. Not required to be operable when the reactor pressure vessel head is not bolted to the vessel.

TABLE 4.1.1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT FUNCTIONAL TESTS
MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENT AND CONTROL CIRCUITS

	Group (2)	Functional Test	Minimum Frequency (3)
Mode Switch in Shutdown	A	Place Mode Switch in Shutdown	Each refueling outage.
Manual Scram	A	Trip Channel and Alarm	Every 3 months.
RPS Channel Test Switch	A	Trip Channel and Alarm	Once/week or after channel maintenance.
IRM			
High Flux	C	Trip Channel and Alarm (4)	One per week during refueling or startup and before each startup.
Inoperative	C	Trip Channel and Alarm (4)	One per week during refueling or startup and before each startup.
APRM			
High Flux	B1	Trip Output Relays (4)	Once/3 months
Inoperative	B1	Trip Output Relays (4)	Once/3 months
Downscale	B1	Trip Output Relays (4)	Once/3 months
Flow Bias	B1	Calibrate Flow Bias Signal (4)	Once/month
High Flux in Startup or Refuel	C	Trip Output Relays (4)	One per week during refueling or startup and before each startup.
High Reactor Pressure (6)	B2	Trip Channel and Alarm (4)	Once/3 months
High Drywell Pressure (6)	B2	Trip Channel and Alarm (4)	Once/3 months
Reactor Low Water Level (5)(6)	B2	Trip Channel and Alarm (4)	Once/3 months

TABLE 4.1.1 (Continued)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT FUNCTIONAL TESTS
MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENT AND CONTROL CIRCUITS

	Group (2)	Functional Test	Minimum Frequency (3)
High Water Level in Scram Discharge Instrument Volume	A	Trip Channel and Alarm	Once/3 months
Turbine Condenser Low Vacuum (6)	B2	Trip Channel and Alarm (4)	Once/3 months
Main Steam Line High Radiation	B1	Trip Channel and Alarm (4)	Once/3 months
Main Steam Line Isolation Valve Closure	A	Trip Channel and Alarm	Once/3 months
Turbine Control Valve EHC Oil Pressure	A	Trip Channel and Alarm	Once/3 months
Turbine First Stage Pressure Permissive	A	Trip Channel and Alarm	Once/3 months
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Once/3 months

NOTES FOR TABLE 4.1.1

1. Deleted.

2. A description of each of the groups is included in the Bases of this Specification.

3. Functional tests are not required on the part of the system that is not required to be operable or are tripped.

   If tests are missed on parts not required to be operable or are tripped, then they shall be performed prior to returning the system to an operable status.

4. This instrumentation is exempted from the instrument channel test definition. This instrument channel functional test will consist of injecting a simulated electrical signal into the measurement channels.

5. The water level in the reactor vessel will be perturbed and the corresponding level indicator changes will be monitored. This perturbation test will be performed every month after completion of the functional test program.

6. These channels consist of analog transmitters, indicators and electronic trip units. Instrument checks shall be performed once per day.

TABLE 4.1.2

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Instrument Channel	Group (1)	Calibration	Minimum Frequency (2)
IRM High Flux	C	Comparison to APRM on Controlled Shutdown	Maximum frequency once per week.
APRM High Flux			
Output Signal	B1	Heat Balance	Twice per week.
Flow Bias Signal	B1	With Standard Pressure Source	Every eighteen months.
LPRM Signal	B1	TIP System Traverse	Every 6 weeks.
High Reactor Pressure	B2	Standard Pressure Source	Once per operating cycle.
High Drywell Pressure	B2	Standard Pressure Source	Once per operating cycle.
Reactor Low Water Level	B2	Pressure Standard	Once per operating cycle.
High Water Level in Scram Discharge Instrument Volume	A	Water Column	Every refueling outage.
Turbine Condenser Low Vacuum	B2	Standard Vacuum Source	Once per operating cycle.
Main Steam Line Isolation Valve Closure	A	Note (5)	Note (5)
Main Steam Line High Radiation	B1	Standard Current Source (3)	Every 3 months.
Turbine First State Pressure Permissive	A	Standard Pressure Source	Every 6 months.

TABLE 4.1.2 (Cont'd.)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Instrument Channel	Group (1)	Calibration	Minimum Frequency (2)
Turbine Control Valve Fast Closure Oil Pressure Trip	A	Standard Pressure Source	Once per operating cycle.
Turbine Stop Valve Closure	A	Note (5)	Note (5)

NOTES FOR TABLE 4.1.2

1. A description of these groups is included in the bases of this Specification.

2. Calibration test is not required on the part of the system that are not required to be operable or are tripped but is required prior to return to service.

3. The current source provides an instrument channel alignment. Calibration using a radiation source shall be made each refueling outage.

4. Deleted.

5. Physical inspection and actuation of these position switches will be performed during the refueling outages.

BASES

The reactor protection system automatically initiates a reactor scram to:

1. Preserve the integrity of the fuel cladding.

2. Preserve the integrity of the reactor coolant system.

3. Minimize the energy which must be absorbed following a loss of coolant accident, and prevent inadvertent criticality.

When there is not fuel in the reactor, the scram serves no function; therefore, the reactor protection system is not required to be operable.

Allowed out of service times for repair and surveillance testing for Reactor Protection System Instrumentation have been determined in accordance with General Electric report NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," General Electric Company, March 1988.

The reactor protection system is of the dual channel type (Reference subsection 7.2 FSAR). The system is made up of two independent trip systems, each having two subchannels of tripping devices. Each subchannel has an input from at least one instrument channel which monitors a critical parameter.

The outputs of the subchannels are combined in a 1 out of 2 logic; i.e., an input signal on either one or both the subchannels will cause a trip system trip. The outputs of the trip systems are arranged so that a trip on both systems is required to produce a reactor scram.

This system meets the intent of IEEE - 279 for Nuclear Power Plant Protection Systems. The system has a reliability greater than that of a 2 out of 3 system and somewhat less than that of a 1 out of 2 system.

With the exception of the Average Power Range Monitor (APRM) channels, the Intermediate Range Monitor (IRM) channels, the Main Steam Isolation Valve closure and the Turbine stop valve closure, each subchannel has one instrument channel. When the minimum condition for operation on the number of operable instrument channels per untripped protection trip system is met or if it cannot be met and the affected protection trip system is placed in a tripped condition, the effectiveness of the protection system is preserved.

Three APRM instrument channels are provided for each protection trip system. APRM's A and E operate contacts in one subchannel and APRM's C and E operate contacts in the other subchannel. APRM's B, D and F are arranged similarly in

4.1 Bases

A. Channel functional test frequencies for Reactor Protection System Instrumentation have been determined in accordance with General Electric report NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," General Electric Company, March 1988.

4.1 Bases (Con'td.)

Intentionally Left Blank

4.1 Bases (Con'td.)

Intentionally Left Blank

4.1 Bases (Con'td.)

Calibration frequency of the instrument channel is divided into two groups. These are as follows:

1. Passive type indicating devices that can be compared with like units on a continuous basis.

2. Vacuum tube or semi-conductor devices and detectors that drift or lose sensitivity.

4.1 Bases (Con'td.)

Intentionally Left Blank

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation

A. Primary Containment Isolation Functions

The primary containment isolation instrumentation for each function in Table 3.2.A shall be Operable; and, there shall be two Operable or tripped trip systems for each trip function.

Applicability:

Whenever Primary Containment Integrity is required.

Conditions and Required Actions:
(1)(2)

1. With one or more channels required by Table 3.2.A inoperable, place channel in trip within 12 hours for Items 1, 4, and 5; and, place channel in trip within 24 hours for Items other than 1, 4, and 5.

2. With one or more automatic functions with primary containment isolation function not maintained, restore primary containment isolation capability within one hour.(3)

3. If the required action and associated completion time of Action 1 or 2 are not met, take the action required by Table 3.2.A for the function.

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation

A. Primary Containment Isolation Functions

Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2.A.

System logic shall be functionally tested as indicated in Table 4.2.A.

(1) When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated Function maintains primary containment isolation capability.

(2) 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 3.2.A for that trip function shall be taken.

(3) This Action not applicable to Item 11, Reactor Cleanup System High Temperature.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation (Continued)

B. Core and Containment Cooling Systems - Initiation and Control

Core and containment cooling system initiation and control instrumentation for each Trip Function in Table 3.2.B shall be Operable; and, there shall be two Operable or tripped trip systems for each Trip Function except as noted in Table 3.2.B.

Applicability:

Each Trip Function listed in Table 3.2.B shall be Operable whenever the system(s) it initiates or controls are required to be Operable as specified in Section 3.5.

Conditions and Required Actions:

With one or more channel(s) required by Table 3.2.B inoperable in one or more Trip Functions, take the Action required by Table 3.2.B.

LIMITING CONDITIONS FOR OPERATION

4.2 Protective Instrumentation (Continued)

B. Core and Containment Cooling Systems - Initiation and Control

Instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.2.B.

System logic shall be functionally tested as indicated in Table 4.2.B.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation (Continued)

C. Control Rod Block (CRB) Actuation

The Control Rod Block Actuation instrumentation for each function in Table 3.2.C shall be Operable; and, there shall be two Operable or tripped trip systems for each function except as noted in Table 3.2.C.

Applicability: (1)

The Rod Block Monitor (RBM) shall be Operable with setpoints as required by Table 3.2.C and the Core Operating Limits Report (COLR).

The APRM, IRM and SRM Control Rod Block (CRB) functions shall be Operable whenever the Reactor Mode Switch is in the Startup or Run positions except as follows:

The SRM and IRM functions are not required when the Reactor Mode Switch is in Run.

The APRM and RBM functions are not required to be Operable when the Reactor Mode Switch is in Startup except for the APRM Upscale (Startup Mode) which is not required to be Operable when the Reactor Mode Switch is in Run.

The scram discharge instrument volume high level rod block is required to be Operable whenever the Reactor Mode Switch is in the Startup or Run positions or in the Refuel position whenever more than one control rod is withdrawn.

Conditions and Required Actions:

With one or more channel(s) required by Table 3.2.C inoperable in one or more trip functions, take the Action required by Table 3.2.C.

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation (Continued)

C. Control Rod Block (CRB) Actuation

Instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.2.C.

System logic shall be functionally tested as indicated in Table 4.2.C.

(1) Section 3.3.B.5 is Applicable during operation with a limiting control rod pattern.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation
(Continued)

D. Radiation Monitoring Systems-Isolation and Initiation Functions

D.1. Reactor Building Isolation and Standby Gas Treatment System

The Reactor Building Isolation and Standby Gas Treatment System instrumentation for each trip function in Table 3.2.D shall be Operable; and, there shall be two Operable or tripped trip systems for each trip function.

Applicability:

Refuel Area Exhaust Monitors and Reactor Building Area Exhaust Monitors shall be Operable whenever the associated systems are required to be Operable.

Main Stack Monitor shall be Operable whenever the containment is purging and primary containment integrity is required.

Conditions and Required Actions: (1)(2)

1. With one or more channels required by Table 3.2.D inoperable in one or more trip functions, place channel in trip within 24 hours.

2. With one or more automatic Functions with containment isolation capability not maintained, restore containment isolation capability within one hour.

3. If the required actions and associated completion times of Action 1 or 2 are not met, take the Action required by Table 3.2.D.

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation
(Continued)

D. Radiation Monitoring Systems-Isolation and Initiation Functions

D.1. Reactor Building Isolation and Standby Gas Treatment System

Instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.2.D.

System logic shall be functionally tested as indicated in Table 4.2.D.

(1) When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated Trip Function maintains isolation capability.

(2) 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 3.2.D for that trip Function shall be taken.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation (Continued)

D. Radiation Monitoring Systems-Isolation and Initiation Functions (Continued)

D.2 Main Control Room
The limiting conditions for operation are given in Table 3.2.D.

E. Drywell Leak Detection

The limiting conditions of operation for the instrumentation that monitors drywell leak detection are given in Section 3.6.C, "Coolant Leakage".

F. Surveillance Information Readouts

The limiting conditions for the instrumentation that provides surveillance information readouts are given in Table 3.2.F.

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation (Continued)

D. Radiation Monitoring Systems-Isolation and Initiation Functions (Continued)

D.2 Main Control Room

Instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.2.D.

E. Drywell Leak Detection

Instrumentation shall be calibrated and checked as indicated in Table 4.2.E.

F. Surveillance Information Readouts

Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation (Continued)

G. Alternate Rod Insertion (ARI) and Recirculation Pump Trip (RPT)

Two trip systems consisting of two channels per trip system for each instrumentation function that initiates an Alternate Rod Insertion (ARI) scram and trips the reactor recirculation pumps (RPT) in Table 3.2.G shall be Operable; and, the manual and automatic actuation logic and actuation devices of both trip systems shall be Operable.

Applicability:

Whenever the Reactor Mode Switch is in the Startup or Run positions.

Conditions and Required Actions: (1)(2)

1. With one or more channels required by Table 3.2.G inoperable, restore channel to Operable status or place channel in trip within 14 days.(3)

2. With one instrument function with trip capability not maintained, restore trip capability within 72 hours.

3. With both instrument functions or an actuation device with trip capability not maintained, restore trip capability for one function within 1 hour.

4. If the required actions and associated completion times of Action 1, 2 or 3 are not met, place the reactor in shutdown or refuel mode within 8 hours.

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation (Continued)

G. Alternate Rod Insertion (ARI) and Recirculation Pump Trip (RPT)

Each RPT and ARI instrumentation channel shall be demonstrated Operable by the performance of the Instrument Check, Instrument Functional Test, Channel Calibration and Logic System Functional Test at the Frequencies shown in Table 4.2.G.

(1) When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated Trip Function maintains ARI/RPT trip capability.

(2) 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 Condition 4 for that trip Function shall be taken.

(3) The action of placing the channel in trip is not applicable if the inoperable channel is the result of an inoperable breaker.

Table 3.2.A

INSTRUMENTATION THAT INITIATES PRIMARY CONTAINMENT ISOLATION

Item	Minimum No. of Operable Instrument Channels per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design	Action (2)
1	2 (6)	Reactor Low Water Level	≥ 0" Indicated Level (3)	4 Inst. Channels	A
2	1	Reactor High Pressure (Shutdown Cooling Isolation)	≤ 75 psig	2 Inst. Channels	D
3	2	Reactor Low-Low-Low Water Level	at or above -160" indicated level (4)	4 Inst. Channels	A
4	2 (6)	High Drywell Pressure	≤ 2 psig	4 Inst. Channels	A
5	2	High Radiation Main Steam Line Tunnel	≤ 15 X Normal Rated Full Power Background (8)	4 Inst. Channels	B
6	2	Low Pressure Main Steam Line	≥ 850 psig (7)	4 Inst. Channels	B
7	2 (5)	High Flow Main Steam Line	≤ 140% of Rated Steam Flow	4 Inst. Channels	B
8	2	Main Steam Line Tunnel Exhaust Duct High Temperature	≤ 200 Deg. F (9)	4 Inst. Channels	B

Table 3.2.A

INSTRUMENTATION THAT INITIATES PRIMARY CONTAINMENT ISOLATION

Item	Minimum No. of Operable Instrument Channels per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design	Action (2)
9	2	Main Steam Line Leak Detection High Temperature	≤ 200 Deg. F	4 Inst. Channels	B
10	1	Reactor Cleanup System High Flow	≤ 300% of Rated Flow	2 Inst. Channels	C
11	1	Reactor Cleanup System High Temperature	≤ 200 Deg. F	1 Inst. Channels	E
12	2	Reactor Pressure (Feedwater Flush System Interlock)	≤ 600 psig	4 Inst. Channels	F

NOTES FOR TABLE 3.2.A

1. Deleted

2. If the required actions and associated completion time of Specification 3.2.A, Actions 1 or 2 are not met, take the action listed below for the affected Trip Function as required by Table 3.2.A.

   A. Initiate an orderly shutdown and have the reactor in Cold Shutdown Condition in 24 hours.

   B. Initiate an orderly load reduction and have Main Steam Lines isolated within 12 hours.

   C. Isolate Reactor Water Cleanup System within 1 hour.

   D. Isolate Shutdown Cooling within 1 hour.

   E. Isolate Reactor Water Cleanup Filter Demineralizers unless the following provision is satisfied. The RWCU Filter Demineralizer may be used (the isolation overridden) to route the reactor water to the main condenser or waste surge tank, with the high temperature trip inoperable for up to 48 hours, provided the water inlet temperature is monitored once per hour and confirmed to be below 180 degrees F.

   F. Isolate Feedwater Flush System within 1 hour.

3. Instrument setpoint corresponds to 538 inches above vessel zero.

4. Instrument setpoint corresponds to 378 inches above vessel zero.

5. Two required for each steam line.

6. These signals also start SBGTS and initiate secondary containment isolation.

7. Only required in Run Mode (Interlocked with Mode Switch).

8. An alarm will be tripped in the control room to alert the control room operators to an increase in the main steam line tunnel radiation level.

TABLE 3.2.B
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 (14) (15)	Reactor Low-Low Water Level	≥-48 in. indicated level	4 HPCI & RCIC Inst. Channels	Initiates HPCI & RCIC.
2 (8) (11) (15)	Reactor Low-Low-Low Water Level	≥-160 in. indicated level (4)	4 Core Spray & RHR Instrument Channels 4 ADS Instrument Channels	1. In conjunction with Low Reactor Pressure initiates Core Spray and LPCI. 2. In conjunction with confirmatory low level, High Drywell Pressure, 120 second time delay, and LPCI or Core Spray pump interlock initiates Auto Blowdown (ADS). 3. Initiates starting of Diesel Generators.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 (9) (16)	Reactor High Water Level	≤+45 in. indicated level	2 Inst. Channels	Trips HPCI & RCIC turbines.
1 (8) (15)	Reactor Low Level (inside shroud)	≥+312 in. above vessel zero (2/3 core height)	2 Inst. Channels	Prevents inadvertent operation of containment spray during accident conditions.
2 (8) (15)	Containment High Pressure	1 ⟨P ⟨2 psig	4 Inst. Channels	Prevents inadvertent operation of containment spray during accident conditions.
1 (11) (15)	Confirmatory Low Level	≥+6 in. indicated level	2 Inst. Channels	ADS Permissive.
2 (8) (11) (14) (15)	High Drywell Pressure	≤2 psig	4 Inst. Channels	1. Initiates Core Spray; LPCI; HPCI. 2. Initiates starting of Diesel Generators. 3. Initiates Auto Blowdown (ADS) in conjunction with Low-Low-Low Reactor water level, 120 second time delay, and LPCI or Core Spray pump running.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 (9) (15)	Reactor Low Pressure	400 - 500 psig	4 Inst. Channels	Permissive for opening Core Spray and LPCI Admission valves. Coincident with high drywell pressure, starts LPCI and Core Spray pumps.
2 (9) (15)	Reactor Low Pressure	200 - 250 psig	4 Inst. Channels	Permissive for closing Recirculation Pump Discharge Valve.
1 (13) (16)	Reactor Low Pressure	50 ≤ P ≤ 75 psig	2 Inst. Channels	In conjunction with PCI signal permits closure of RHR (LPCI) injection valves.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 (9) (15)	Core Spray Pump Start Timer	6 ± 1 sec.	4 timers	All pumps - loss of offsite power only.
		13 sec. ± 7% of setting 23 sec. ± 7% of setting	2 timers 2 timers	A & C pumps - offsite power available. B & D pumps - offsite power available.
1 per 4kV bus (7)	480V Emergency Load Center Timer	3 ± 0.5 sec.	4 timers	All timers - loss of offsite power only.
2 (9) (15)	LPCI Pump Start Timer (Four Pumps)	2 sec. ± 7% of setting 8 sec. ± 7% of setting	4 timers 4 timers	LPCI pumps A & B. LPCI pumps C & D.
1 (12) (15)	ADS Actuation Timer	90 ≤t ≤120 seconds	2 timers	In conjunction with Low Reactor Water Level, High Drywell Pressure and LPCI or Core Spray Pump running interlock, initiates ADS.
2 (12) (15)	ADS Bypass Timer	8 ≤t ≤10 minutes	4 timers	In conjunction with Low Reactor Water Level, bypasses high drywell pressure initiation of ADS.
2 (12) (15)	RHR (LPCI) Pump Discharge Pressure Interlock	50 ± 10 psig	4 channels	Defers ADS actuation pending confirmation of Low Pressure Core Cooling system operation (LPCI Pump running interlock).
2 (12) (15)	Core Spray Pump Discharge Pressure Interlock	185 ± 10 psig	4 channels	Defers ADS actuation pending confirmation of Low Pressure Core Cooling system operation (Core Spray Pump running interlock).

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
1 (8) (16)	RHR (LPCI) Trip System bus power monitor	NA	2 Inst. Channels	Monitors availability of power to logic systems.
1 (8) (16)	Core Spray Trip System bus power monitor	NA	2 Inst. Channels	Monitors availability of power to logic systems.
1 (8) (16)	ADS Trip System bus power monitor	NA	3 Inst. Channels	Monitors availability of power to logic systems.
1 (8) (16)	HPCI Trip System bus power monitor	NA	2 Inst. Channels	Monitors availability of power to logic systems.
1 (8) (16)	RCIC Trip System bus power monitor	NA	2 Inst. Channels	Monitors availability of power to logic systems.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
1 (8) (16)	Core Spray Sparger to Reactor Pressure Vessel d/p	1 (plus or minus 1.5) psid	2 Inst. Channels	Alarm to detect core spray sparger pipe break.
2 (10) (15)	Condensate Storage Tank Low Level	Greater than or equal to 5' above tank bottom	2 Inst. Channels	Provides interlock to HPCI pump suction valves.
2 (10) (15)	Suppression Chamber High Level	Less than or equal to 5" above torus midpoint	2 Inst. Channels	Transfers HPCI pump suction to suppression chamber.
2 (10) (15)	Condensate Storage Tank Low Level	Greater than or equal to 5' above tank bottom	2 Inst. Channels	Transfers RCIC pump suction to suppression chamber.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
1 (13) (15)	RCIC Turbine High Flow	≤ 450" H_2O (2)	2 Inst. Channels	
1 (13) (15)	RCIC Turbine High Flow Time Delay	3 ± 1 seconds	2 Inst. Channels	
2 (13) (15)	RCIC Turbine Compartment Wall	≤ 200 deg. F (2)	4 Inst.)) 16 Inst.	
6 (13) (15)	RCIC Steam Line Area Temp.	≤ 200 deg. F (2)	) 12 Inst.)	
2 (13) (15)	RCIC Steam Line Low Pressure	100 〉 p 〉 50 psig (2)	4 Inst.	
1 (13) (15)	HPCI Turbine Steam Line High Flow	≤ 225" H_2O (3)	2 Inst. Channels	
1 (13) (15)	HPCI Turbine High Flow Time Delay	3 ± 1 seconds	2 Inst. Channels	

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Inst. Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
4 (5) (13) (15)	HPCI Steam Line Low Pressure	100 >p >50 psig (3)	4 Inst.	
2 (13) (15)	HPCI Turbine Compartment Temperature	≤200 deg. F (3)	4 Inst.)))	
4 (13) (15)	HPCI Steam Line Area Temperature	≤200 deg. F (3)	8 Inst.)) 16 Inst.	
2 (13) (15)	HPCI/RHR Valve Station Area Temperature	≤200 deg. F (3)	4 Inst.))	
1 (1)	LPCI Cross-Connect Position	NA	1 Inst.	Initiates annunciation when valve is not closed.
1 per 4 kV bus (1)	4 kV Emergency Bus Undervoltage Relay (HGA)	25% (±5%) of Rated Voltage		1. Trips all loaded breakers. 2. Fast transfer permissive. 3. Dead bus start of diesel.
1 per 4 kV bus (1)	4 kV Emergency Bus Sequential Loading Relay (SV)	95% (+0%, -10%) of Rated Voltage		Permits sequential starting of vital loads.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 per 4 kV bus (1)	Emergency Transformer Undervoltage (IAV) (Inverse time-voltage)	60% (±5%) of rated voltage. Test at zero volts in 1.8 seconds (±10%).		1. Trips emergency transfer feed to 4kV emergency bus. 2. Fast transfer permissive.
2 per 4 kV bus (1)	Degraded voltage (27N) ("non-LOCA" relay)	98% of rated voltage ±0.3% of setting (4077 volts ± 12 volts) 0.9 - 1.1 second internal time delay 60 second ± 5% (±3 sec.) time delay		1. Trips emergency transformer feed to 4kV emergency bus. 2. Fast transfer permissive.
2 per 4 kV bus (1)	Degraded voltage (27N) ("LOCA" relay)	89% of rated voltage ±0.3% of setting (3702 volts ± 11 volts) 0.9 - 1.1 second internal time delay 9 second ± 7%(±0.6 sec.) time delay		1. Trips emergency transformer feed to 4kV emergency bus. 2. Fast transfer permissive. 3. Safety injection signal required.

TABLE 3.2.B (continued)

INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 per 4 kV bus (1)	Emergency Transformer Degraded voltage (Inverse time - voltage). (CV-6)	87% (±5%) of Rated Voltage. Tests at 2940 volts in 30 seconds (±10%)		1. Trips emergency transformer feed to 4kV emergency bus. 2. Fast transfer permissive.

NOTES FOR TABLE 3.2.B

1. With one or more required channel(s) inoperable in one or more Trip Functions, place channel in trip within one hour or the reactor shall be placed in the Cold Shutdown Condition within 24 hours.

2. Close isolation valves in RCIC subsystem.

3. Close isolation valves in HPCI subsystem.

4. Instrument setpoint corresponds to 378 inches above vessel zero.

5. HPCI has only one trip system for these sensors.

6. Deleted

7. The failure of a 480V Emergency Load Center timer could result in the failure of a 480V Emergency Load Center to re-energize following the loss of one or both offsite sources. Therefore, Technical Specification 3.9.B.7 will apply when a 480V Emergency Load Center timer is not Operable.

8. With one or more required channel(s) inoperable in one or more Trip Functions:
   1. Within 24 hours, place inoperable channel in trip; and,
   2. Within one hour from discovery of loss of feature initiation capability in both trip systems for feature(s) supported by this trip function, declare supported feature(s) inoperable (See Footnote (1)).
   3. If required actions and associated completion times of Action 1 or 2 are not met, declare associated supported features inoperable immediately.

9. With one or more required channel(s) inoperable in one or more Trip Functions:
   1. Within 24 hours, restore channel to Operable status; and,
   2. Within one hour from discovery of loss of initiation capability in both trip systems for feature(s) supported by this trip function, declare supported feature(s) inoperable(See Footnote (2)).
   3. If required actions and associated completion times of Action 1 or 2 are not met, declare associated supported features inoperable immediately.

10. With one or more required channel(s) inoperable in one or more Trip Functions:
    1. Within 24 hours, place inoperable channel in trip or align affected (HPCI or RCIC) pump suction to suppression pool; and,
    2. Within one hour of discovery of loss of initiation capability, declare affected system (HPCI or RCIC) inoperable If associated pump suction is not aligned to suppression pool.
    3. If required actions and associated completion times of Action 1 or 2 are not met, declare associated system inoperable immediately.

---

(1) Only applicable to the High Drywell Pressure and Reactor Low-Low-Low Water Level functions.

(2) Not applicable to Reactor High Water level Function.

11. With one or more required channel(s) inoperable in one or more Trip Functions:
    1. Within one hour from discovery of loss of ADS initiation capability in both trip systems, declare ADS valves inoperable; and,
    2. Within 96 hours from discovery of inoperable channel concurrent with HPCI or RCIC inoperable, place inoperable channel in trip; and,
    3. Within 8 days from discovery of inoperable channel if both HPCI and RCIC are Operable, place inoperable channel in trip.
    4. If required actions and associated completion times of Action 1 or 2 or 3 are not met, declare ADS inoperable immediately.

12. With one or more required channel(s) inoperable in one or more Trip Functions:
    1. Within one hour from discovery of loss of ADS initiation capability in both trip systems, declare ADS valves inoperable; and,
    2. Within 96 hours from discovery of inoperable channel concurrent with HPCI or RCIC inoperable, restore channel to Operable status; and,
    3. Within 8 days from discovery of inoperable channel if both HPCI and RCIC are Operable, restore channel to Operable status.
    4. If required actions and associated completion times of Action 1 or 2 or 3 are not met, declare ADS inoperable immediately.

13. With one or more required channel(s) inoperable in one or more Trip Functions:
    1. Within 24 hours, place channel in trip; and,
    2. Within one hour from discovery of one or more automatic functions with primary containment isolation capability not maintained, restore primary isolation capability.
    3. If required actions and associated completion times of Action 1 or 2 are not met, isolate affected penetration flow path(s) within one hour.

14. With one or more required channel(s) inoperable in one or more Trip Functions:
    1. Within 24 hours, place inoperable channel in trip; and,
    2. Within one hour from discovery of loss of system (HPCI or RCIC) initiation capability, declare affected system (HPCI or RCIC) inoperable.
    3. If required actions and associated completion times of Action 1 or 2 are not met, declare affected system (HPCI or RCIC) inoperable immediately.

15. When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of required Actions may be delayed for up to 6 hours provided associated Trip Function maintains trip capability.

16. When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of required Actions may be delayed for up to 6 hours.

TABLE 3.2.C
INSTRUMENTATION THAT INITIATES CONTROL ROD BLOCKS

Minimum No. of Operable Instrument Channels Per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design	Action
4 (2)	APRM Upscale (Flow Biased)	(0.66W+54%-0.66ΔW) (Clamp at 108% max)	6 Inst. Channels	(10) (14)
4	APRM Upscale (Startup Mode)	≤ 12%	6 Inst. Channels	(10) (14)
4	APRM Downscale	≥ 2.5 indicated on scale	6 Inst. Channels	(10) (14)
1 (7) (11) (13)	Rod Block Monitor (Power Biased)	(RTP ≥85%), S_{RB} ≤HTSP (65% ≤RTP <85%), S_{RB} ≤ITSP (30% ≤RTP <65%), S_{RB} ≤LTSP	2 Inst. Channels	(12) (14)
1 (7) (11) (13)	Rod Block Monitor Downscale	≥ DTSP	2 Inst. Channels	(12) (14)
6	IRM Downscale (3)	≥ 2.5 indicated on scale	8 Inst. Channels	(10)
6	IRM Detector not in Startup Position	(8)	8 Inst. Channels	(10)
6	IRM Upscale	≤ 108 indicated on scale	8 Inst. Channels	(10)
2 (5)	SRM Detector not in Startup Position	(4)	4 Inst. Channels	(1)
2 (5) (6)	SRM Upscale	≤ 10^5 counts/sec.	4 Inst. Channels	(1)
1 (15)	Scram Discharge Instrument Volume High Level	≤ 25 gallons	1 Inst. Channel	(9)

NOTES FOR TABLE 3.2.C

1. If the first column cannot be met for one of the two trip systems, this condition may exist for up to seven days provided that during that time the operable system is functionally tested immediately and daily thereafter; if this condition lasts longer than seven days, the system shall be tripped. If the first column cannot be met for both trip systems, the systems shall be tripped.

2. W = Loop Recirculation flow in percent of design.

   Trip level setting is in percent of rated power (3458 MWt).

   ΔW is the difference between two loop and single loop effective recirculation drive flow rate at the same core flow. During single loop operation, the reduction in trip setting is accomplished by correcting the flow input of the flow biased rod block to preserve the original (two loop) relationship between the rod block setpoint and recirculation drive flow. $\Delta W = 0$ for two loop operation.

3. IRM downscale is bypassed when it is on its lowest range.

4. This function is bypassed when the count rate is $\geq$ 100 cps.

5. One of the four SRM inputs may be bypassed.

6. This SRM function is bypassed when the IRM range switches are on range 8 or above.

7. The trip is bypassed when the reactor power is $\leq$ 30%.

8. This function is bypassed when the mode switch is placed in Run.

NOTES FOR TABLE 3.2.C (Cont.)

9. If the number of operable channels is less than required by the minimum operable channels per trip function requirement, place the inoperable channel in the tripped condition within twelve hours.

10. For the Startup (for IRM rod block) and the Run (for APRM rod block) positions of the Reactor Mode Selector Switch and 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.

11. The values of HTSP, ITSP, LTSP and DTSP are specified in the CORE OPERATING LIMITS REPORT.

12. With one or more required Rod Block Monitor channel(s) inoperable:

    a. With one rod block monitor (RBM) channel inoperable, restore RBM channel to Operable status within 24 hours.
    b. If the required action and associated completion time in Action a above are not met, place one RBM channel in trip within 1 hour.
    c. With 2 RBM channels inoperable, place one RBM channel in trip within 1 hour.

13. Section 3.3.B.5 is Applicable during operation with a limiting control rod pattern.

14. When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated function maintains control rod block capability.

15. The scram discharge instrument volume has only one trip system.

Amendment No. ~~88, 91, 154, 192~~, 203

TABLE 3.2.D
RADIATION MONITORING SYSTEMS THAT INITIATE AND/OR ISOLATE SYSTEMS

Minimum No. of Operable Instrument Channels Per Trip System	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Action (1)
2	Refuel Area Exhaust Monitor	Upscale, <16 mr/hr	4 Inst. Channels	A or B
2	Reactor Building Exhaust Monitors	Upscale, <16 mr/hr	4 Inst. Channels	B
1	Main Stack Monitor	Upscale, $\leq 10^6$ cps	2 Inst. Channels	C
2 (2)	Main Control Room	Upscale, <400 cpm	4 Inst. Channels	D

Notes for Table 3.2.D

1. Action

   A. Cease operation of the refueling equipment.

   B. Isolate secondary containment and start the standby gas treatment system.

   C. Cease purging of primary containment, and close vent and purge valves greater than 2 inches in diameter.

   D. As described in LCO 3.11.A.5.

2. The trip function is required to be operable whenever secondary containment is required on either unit.

TABLE 3.2.G
INSTRUMENTATION THAT INITIATES ALTERNATE ROD INSERTION AND RECIRCULATION PUMP TRIP

Minimum No. of Operable Instrument Channels Per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design per Trip System
2	Reactor High Pressure	≤ 1120 psig	2
2	Reactor Low-Low Water Level	≥ -48 in. indicated level	2

TABLE 4.2.A

MINIMUM TEST AND CALIBRATION FREQUENCY FOR PCIS

Instrument Channel (5)	Instrument Functional Test	Calibration Frequency	Instrument Check
1) Reactor High Pressure (Shutdown Cooling Permissive)	Once/ 3 months	Once/3 months	None
2) Reactor Low-Low-Low Water Level (7)	Once/3 months (3)	Once/operating cycle	Once/day
3) Main Steam High Temp.	Once/3 months (3)	Once/operating cycle	Once/day
4) Main Steam High Flow (7)	Once/3 months (3)	Once/operating cycle	Once/day
5) Main Steam Low Pressure	Once/3 months	Once/3 months	None
6) Reactor Water Cleanup High Flow	Once/3 months	Once/3 months	Once/day
7) Reactor Water Cleanup High Temp.	Once/3 months	Once/3 months	None
8) Reactor Pressure (Feedwater Flush Permissive)	Once/3 months (3)	Once/operating cycle	Once/day

Logic System Functional Test (4) (6)	Frequency
1) Main Steam Line Isolation Vvs. Main Steam Line Drain Vvs. Reactor Water Sample Vvs.	Once/operating cycle
2) RHR - Isolation Vv. Control Shutdown Cooling Vvs. Head Spray	Once/operating cycle
3) Reactor Water Cleanup Isolation	Once/operating cycle
4) Drywell Isolation Vvs. TIP Withdrawal Atmospheric Control Vvs. Sump Drain Valves	Once/operating cycle
5) Standby Gas Treatment System Reactor Building Isolation	Once/operating cycle

TABLE 4.2.B
MINIMUM TEST AND CALIBRATION FREQUENCY FOR CSCS

Instrument Channel	Instrument Functional Test	Calibration Frequency	Instrument Check
1) Reactor Water Level (7)	Once/3 months (3)	Once/operating cycle	Once/day
2) Drywell Pressure (7)	Once/3 months (3)	Once/operating cycle	Once/day
3) Reactor Pressure (7)	Once/3 months (3)	Once/operating cycle	Once/day
4) Reactor Pressure - PCIS/LPCI Interlock	Once/3 months	Once/3 months	None
5) Auto Sequencing Timers	NA	Once/operating cycle	None
6) ADS - LPCI or CS Pump Disch. Pressure Interlocks	Once/3 months	Once/3 months	None
7) Trip System Bus Power Monitors	Once/3 months	NA	None
8) Core Spray Sparger d/p	Once/3 months	Once/6 months	Once/day
9) Steam Line High Flow (HPCI & RCIC)	Once/3 months	Once/3 months	None
10) Steam Line High Flow Timers (HPCI and RCIC)	NA	Once/operating cycle	None
11) Steam Line High Temp. (HPCI & RCIC)	Once/3 months (3)	Once/operating cycle	Once/day
12) Safeguards Area High Temp.	Once/3 months	Once/3 months	None

TABLE 4.2.B (continued)
MINIMUM TEST AND CALIBRATION FREQUENCY FOR CSCS

Instrument Channel	Instrument Functional Test	Calibration Frequency	Instrument Check
13) HPCI and RCIC Steam Line Low Pressure	Once/3 months	Once/3 months	None
14) HPCI Suction Source Levels	Once/3 months	Once/3 months	None
15) 4KV Emergency Power System Voltage Relays (HGA,SV)	Once/operating cycle	Once/5 years	None
16) ADS Relief Valves Bellows Pressure Switches	Once/operating cycle	Once/operating cycle	None
17) LPCI/Cross Connect Valve Position	Once/refueling cycle	N/A	N/A
18) Condensate Storage Tank Level (RCIC) (7)	Once/3 months	Once/operating cycle	Once/day
19) 4KV Emergency Power Source Degraded Voltage Relays (IAV,CV-6,ITE)	Once/month	Once/eighteen months	None

Unit 2

TABLE 4.2.C
MINIMUM TEST AND CALIBRATION FREQUENCY FOR CONTROL ROD BLOCKS ACTUATION

Instrument Channel	Instrument Functional Test	Calibration	Instrument Check
1) APRM - Downscale	Once/3 months (3)	Once/3 months	Once/day
2) APRM - Upscale	Once/3 months (3)	Once/3 months	Once/day
3) IRM - Upscale	(2) (3)	Startup or Control Shutdown	(2)
4) IRM - Downscale	(2) (3)	Startup or Control Shutdown	(2)
5) RBM - Upscale	Once/3 months (3)	Once/6 months	Once/day
6) RBM - Downscale	Once/3 months (3)	Once/6 months	Once/day
7) SRM - Upscale	(2) (3)	Startup or Control Shutdown	(2)
8) SRM - Detector Not In Startup Position	(2) (3)	N/A	(2)
9) IRM - Detector Not In Startup Position	(2) (3)	N/A	(2)
10) Scram Discharge Instrument Volume - High Level	Quarterly	Once/Operating Cycle	N/A

Logic System Functional Test (4) (6)	Frequency
1) System Logic Check	Once/Operating Cycle

Unit 2

TABLE 4.2.D
MINIMUM TEST & CALIBRATION FREQUENCY FOR RADIATION MONITORING SYSTEMS

Instrument Channels	Instrument Functional Test	Calibration	Instrument Check (2)
1) Refuel Area Exhaust Monitors - Upscale	Once/3 months	Once/3 months	Once/day
2) Reactor Building Area	Once/3 months	Once/3 months	Once/day
3) Main Stack Monitor	Once/3 months	Once/12 months as described in 4.8.C.4.a	Once/day
4) Main Control Room	Once/3 months	Once/18 months as described in 4.11.A.5	Once/day

Logic System Functional Test (4) (6)	Frequency
1) Reactor Building Isolation	Once/Operating Cycle
2) Standby Gas Treatment System Actuation	Once/Operating Cycle

TABLE 4.2.E
MINIMUM TEST & CALIBRATION FREQUENCY FOR DRYWELL LEAK DETECTION

Instrument Channel	Instrument Functional Test	Calibration Frequency	Instrument Check
1) Equipment Drain Sump Flow Integrator	Once/month	Once/3 months	Once/day
2) Floor Drain Sump Flow Integrator	Once/month	Once/3 months	Once/day
3) Drywell Atmosphere Radioactivity Monitor	Once/month	Once/3 months	Once/day

NOTES FOR TABLES 4.2.A THROUGH 4.2.F

1. Deleted.

2. Functional tests, calibrations and instrument checks are not required when these instruments are not required to be operable or are tripped. Functional tests shall be performed before each startup with a required frequency not to exceed once per week. Calibrations shall be performed within 24 hours before each startup or controlled shutdown with a required frequency not to exceed once per week. Instrument checks shall be performed at least once per day during those periods when the instruments are required to be operable.

3. This instrumentation is excepted from the functional test definition. The functional test will consist of injecting a simulated electrical signal into the measurement channel. These instrument channels will be calibrated using simulated electrical signals.

4. Simulated automatic actuation shall be performed once each operating cycle. Where possible, all logic system functional tests will be performed using the test jacks.

5. Reactor low water level, high drywell pressure and high radiation main steam line tunnel are not included on Table 4.2.A since they are tested on Table 4.1.2.

6. The logic system functional tests shall include a calibration of time delay relays and timers necessary for proper functioning of the trip systems.

7. These channels consist of analog transmitters, indicators and electronic Trip units.

TABLE 4.2.G

Unit 2

MINIMUM TEST AND CALIBRATION FREQUENCY FOR ALTERNATE ROD INSERTION AND RECIRCULATION PUMP TRIP

Instrument Channel	Instrument Check (1)	Instrument Functional Test (1)	Calibration Frequency (1)
Reactor High Pressure	Once/day	Once/3 months	Once/Operating Cycle
Reactor Low-Low Water Level	Once/day	Once/3 months	Once/Operating Cycle

Logic System Functional Test (2)	Frequency
Alternate Rod Insertion/Recirculation Pump Trip	Once/3 months
Alternate Rod Insertion/Recirculation Pump Trip including air venting and breaker trip (3)	Once/Operating Cycle

Notes:

1. In accordance with Table 4.2.B. These instrument channels are the same ones used by the Core and Containment Cooling Systems.

2. The recirculation pumps need not be tripped.

3. This test, performed while shutdown, will include venting of the scram air header and tripping of the recirculation pump breakers. The test will also verify operability of the manual actuation logic.

3.2 BASES

In addition to reactor protection instrumentation which initiates a reactor scram, protective instrumentation has been provided which initiates action to mitigate the consequences of accidents which are beyond the operator's ability to control, or terminates operator errors before they result in serious consequences. This set of specifications provides the limiting conditions of operation for the primary system isolation function, initiation of the core cooling systems, control rod block and standby gas treatment systems. The objectives of the Specifications are (i) to assure the effectiveness of the protective instrumentation when required even during periods when portions of such systems are out-of-service for maintenance, and (ii) to prescribe the trip settings required to assure adequate performance.

Channel functional test frequencies and allowed out of service times for repair and surveillance testing for Isolation Instrumentation have been determined in accordance with General Electric reports NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," and NEDC-31677P-A,"Technical Specification Improvement Analyses for BWR Isolation Actuation Instrumentation." The AOT is 12 hours for Table 3.2.A Items 1, 4, and 5 because these items have instrumentation that is common to the RPS. Other Table 3.2.A Items have an AOT of 24 hours.

Channel functional test frequencies and allowed out of service times for repair and surveillance testing for ECCS Actuation Instrumentation have been determined in accordance with General Electric reports NEDC-30936P-A,"BWR Owners' Group Technical Specification Improvement Methodology with Demonstration for BWR ECCS Actuation Instrumentation," Parts 1 and 2, and RE-022,"Technical Specification Improvement Analysis for the Emergency Core Cooling System Actuation Instrumentation for Peach Bottom Atomic Power Station, Units 2 and 3."

Channel functional test frequencies and allowed out of service times for repair and surveillance testing for miscellaneous instruments have been determined in accordance with General Electric report GENE-770-06-1,"Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," and the associated NRC Safety Evaluation Report dated July 21, 1992.

Channel functional test frequencies and allowed out of service times for repair and surveillance testing for RCIC instrumentation have been determined in accordance with

3.2 BASES (continued)

General Electric report GENE-770-06-2,"Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," and the associated NRC Safety Evaluation Report dated September 13, 1991.

Some of the settings on the instrumentation that initiate or control core and containment cooling have tolerances explicitly stated where the high and low values are both critical and may have a substantial effect on safety. The set points of other instrumentation, where only the high or low end of the setting has a direct bearing on safety, are chosen at a level away from the normal operating range to prevent inadvertent actuation of the safety system involved and exposure to abnormal situations.

Actuation of primary containment valves is initiated by protective instrumentation shown in Table 3.2.A which senses the conditions for which isolation is required. Such instrumentation must be available whenever primary containment integrity is required.

The instrumentation which initiates primary system isolation is connected in a dual bus arrangement.

The low water level instrumentation set to trip at zero inches indicated level (538 inches above vessel zero) closes all isolation valves except those in Groups 1, 4 and 5. Details of valve grouping and required closing times are given in Specification 3.7. For valves which isolate at this level, this trip setting is adequate to prevent the core from being uncovered in the case of a break in the largest line assuming a 60 second valve closing time. Required closing times are less than this.

The low-low reactor water level instrumentation is set to trip when reactor water level is minus 48 inches indicated level (490 inches above vessel zero). This trip initiates HPCI, RCIC, Alternate Rod Insertion and trips the recirculation pumps. The low-low-low reactor water level instrumentation is set to trip when the reactor water level is minus 160 inches indicated level (378 inches above vessel zero). This trip closes Main Steam Line Isolation Valves, Main Steam Drain Valves and Recirc Sample Valves (Group 1), activates the remainder of the CSCS subsystem, and starts

3.2 BASES (Cont'd)

Pressure instrumentation is provided to close the main steam isolation valves in RUN Mode when the main steam line pressure drops below 850 psig. The Reactor Pressure Vessel thermal transient due to an inadvertent opening of the turbine bypass valves when not in the RUN Mode is less severe than the loss of feedwater analyzed in section 14.5 of the FSAR; therefore, closure of the Main Steam isolation valves for thermal transient protection when not in RUN Mode is not required.

The HPCI high flow and temperature instrumentation are provided to detect a break in the HPCI steam piping. Tripping of this instrumentation results in actuation of HPCI isolation valves. Tripping logic for the high flow is 1 out of 2 logic. Temperature is monitored at four (4) locations with four (4) temperature sensors at each location. Two (2) sensors at each location are powered by "A" DC control bus and two (2) by "B" DC control bus. Each pair of sensors, e.g., "A" or "B" at each location are physically separated and the tripping of either "A" or "B" bus sensor will actuate HPCI isolation valves. The trip settings of ≤ 300% of design flow for high flow and 200 degrees F for high temperature are such that core uncovery is prevented and fission product release is within limits.

The RCIC high flow and temperature instrumentation are arranged the same as that for the HPCI. The trip setting of ≤ 300% for high flow and 200 degrees F for temperature are based on the same criteria as the HPCI.

The Reactor Water Cleanup System high flow instrumentation is arranged similar to that for the HPCI System. The trip settings are such that core uncovery is prevented and fission product release is maintained within limits. The high temperature instrumentation downstream of the non-regenerative heat exchanger is provided to protect the ion exchange resin in the demineralizer from damage due to high temperature. Such damage could impair the resins' ability to remove impurities from the primary coolant and possibly result in the release of previously captured impurities back into the coolant in large concentrations.

The instrumentation which initiates CSCS action is arranged in a dual bus system. As for other vital instrumentation arranged in this fashion, the Specification preserves the effectiveness of the system even during periods when maintenance or testing is being performed. An exception to this is when logic functional testing is being performed.

The control rod block functions are provided to prevent excessive control rod withdrawal so that MCPR does not decrease to the fuel cladding integrity safety limit. The trip logic for this function is 1 out of n: e.g., any trip on one of 6 APRM's, 8 IRM's, or 4 SRM's will result in a rod block.

The minimum instrument channel requirements assure sufficient instrumentation to assure the single failure criteria is met.

4.2 BASES

The instrumentation listed in Tables 4.2.A through 4.2.F will be functionally tested and calibrated at regularly scheduled intervals.

4.2 BASES (continued)

Intentionally Left Blank

4.2 BASES (continued)

Intentionally Left Blank

4.2 BASES (continued)

Intentionally Left Blank

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

PECO ENERGY COMPANY

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-278

PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 206
License No. DPR-56

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

   A. The application for amendment by PECO Energy Company, et al. (the licensee) dated September 26, 1994, as supplemented by letters dated January 5, and March 23, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I.

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

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

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

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

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. DPR-56 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 206 , are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Donald A. Brinkman
for John F. Stolz, Director
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: June 6, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 206

FACILITY OPERATING LICENSE NO. DPR-56

DOCKET NO. 50-278

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Remove	Insert
35	35
36	36
36a	36a
37	37
38	38
39	39
41	41
42	42
43	43
44	44
45	45
46	46
47	47
51	51
52	52
53	53
53a	53a
55	55
57	57
-	57a
58	58
59	59
-	59a
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
71a	71a
71b	71b
72	72
-	72a
73	73
74	74

ATTACHMENT TO LICENSE AMENDMENT NO. 206

FACILITY OPERATING LICENSE NO. DPR-56

DOCKET NO. 50-278

Remove	Insert
74a	74a
75	75
79	79
80	80
81	81
81a	81a
83	83
84	84
85	85
87	87
88	88
89	89
-	89a
91	91
94	94
95	95
96	96
98	98

LIMITING CONDITIONS FOR OPERATION

3.1 Reactor Protection System (RPS)

A. The RPS instrumentation for each trip function in Table 3.1.1 shall be Operable; and, there shall be two Operable or tripped trip systems for each Trip Function.

The designed system response times from the opening of the sensor contact up to and including the opening of the trip actuator contacts shall not exceed 50 milliseconds.

Applicability:

According to Table 3.1.1.

Conditions and Required Actions: (1)(2)

1. With one or more channel(s) required by Table 3.1.1 inoperable in one or more trip functions, place the inoperable channel or associated trip system in trip within 12 hours.

2. With one or more trip functions with one or more channels required by Table 3.1.1 inoperable in both trip systems, place channel in one trip system in trip or place one trip system in trip within 6 hours.

3. With one or more automatic trip functions or two or more manual trip functions (Mode Switch in Shutdown, Manual Scram and RPS Channel Test Switches) with RPS trip capability not maintained, restore RPS trip capability within one hour.

4. If the required actions and associated completion time of Action 1 or 2 or 3 are not met, take the action required by Table 3.1.1 for the Trip Function.

SURVEILLANCE REQUIREMENTS

4.1 Reactor Protection System

A. Each RPS instrument channel shall be demonstrated Operable by performance of a channel functional test and channel calibration at the Frequencies shown in Tables 4.1.1 and 4.1.2, respectively.

Response time measurements (from the opening of the sensor contact up to and including the opening of the trip actuator contacts) are not part of the normal instrument test. The RPS response time of each reactor trip function shall be demonstrated to be within its limits once per operating cycle.

---

(1) When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated trip function maintains RPS trip capability.

(2) 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 3.1.1 for that trip function shall be taken immediately.

LIMITING CONDITIONS FOR OPERATION

3.1 Reactor Protection System (continued)

B. N/A

C. N/A

D. Reactor Protection System Power Supply

D.1 Reactor Protection System Power Supply:

One trip train* per RPS MG set may be in the bypassed or inoperative condition for a period of 72 hours. If this condition cannot be satisfied, or if both trip trains are inoperative, the RPS bus shall be transferred to the alternate source or de-energized within 30 minutes.

D.2 One trip train* of the RPS alternate power supply may be in the bypassed or inoperative condition for a period of 72 hours. If this condition cannot be satisfied, or if both trip trains are inoperative, the RPS bus shall be transferred to the RPS MG set or de-energized within 30 minutes.

SURVEILLANCE REQUIREMENTS

4.1 Reactor Protection System (continued)

B. Deleted

C. Deleted

D. Reactor Protection System Power Supply

D.1 The following RPS power supply (MG set) protective devices shall be functionally tested at least once every six months and calibrated once each refueling outage.

Device	Acceptable Setting
Undervoltage	113 ± 2 Volts
Overvoltage	131 ± 2 Volts
Underfrequency	57 Hz ± .2 Hz
Underfrequency Time Delay	6 sec ± 1 sec

D.2 The following RPS alternate power supply protective devices shall be functionally tested at least once every six months and calibrated once each refueling outage.

Device	Acceptable Setting
Undervoltage	113 ± 2 Volts
Overvoltage	131 ± 2 Volts
Underfrequency	57 Hz ± .2 Hz
Undervoltage Time Delay	Max. 4 secs.

* A trip train consists of one breaker, one undervoltage relay, one overvoltage relay, one underfrequency relay, one time delay relay (MG set only), and the associated logic.

Intentionally Blank

Table 3.1.1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

Item	Minimum No. of Operable Instrument Channels per Trip System	Trip Function	Trip Level Setting	Modes In which Function Must Be Operable: Refuel (7)	Startup	Run	Number of Instrument Channels Provided by Design	Action (1)
1	1	Mode Switch In Shutdown		x	x	x	1 Mode Switch (4 Sections)	A
2	1	Manual Scram		x	x	x	2 Instrument Channels	A
3	3	IRM High Flux	≤120/125 of Full Scale	x	x	(5)	8 Instrument Channels	A
4	3	IRM Inoperative		x	x	(5)	8 Instrument Channels	A
5	2	APRM High Flux	(0.66W+71%-0.66ΔW) (Clamp @ 120%) (12) (13)			x	6 Instrument Channels	A or B
6	2	APRM Inoperative	(11)	x	x	x	6 Instrument Channels	A or B
7	2	APRM Downscale	≥2.5 Indicated on Scale			(10)	6 Instrument Channels	A or B
8	2	APRM High Flux in Startup	≤15% Power	x	x		6 Instrument Channels	A
9	2	High Reactor Pressure	≤1055 psig	x (9)	x	x	4 Instrument Channels	A
10	2	High Drywell Pressure	≤2 psig	x (8)	x (8)	x	4 Instrument Channels	A
11	2	Reactor Low Water Level	≥0 in. Indicated Level	x	x	x	4 Instrument Channels	A

Table 3.1.1 (continued)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

Item	Minimum No. of Operable Instrument Channels per Trip System	Trip Function	Trip Level Setting	Modes In which Function Must Be Operable: Refuel (7)	Startup	Run	Number of Instrument Channels Provided by Design	Action (1)
12	2	High Water Level in Scram Discharge Volume	≤ 50 Gallons	X (2)	X	X	4 Instrument Channels	A
13	2	Turbine Condenser Low Vacuum	≥ 23 IN. Hg. Vacuum			X	4 Instrument Channels	A or C
14	2	Main Steam Line High Radiation	≤ 15 X Normal Full Power Background	X	X	X	4 Instrument Channels	A
15	8	Main Steam Line Isolation Valve Closure	≤ 10% Valve Closure			X (6)	16 Instrument Channels	A
16	2	Turbine Control Valve Fast Closure	500 (P (850 psig control Oil Pressure Between Fast Closure Solenoid and Disc Dump Valve			X (4)	4 Instrument Channels	A or D
17	4	Turbine Stop Valve Closure	≤ 10% Valve Closure			X (4)	8 Instrument Channels	A or D
18	2	RPS Channel Test Switches		X	X	X	4 Instrument Channels	A

NOTES FOR TABLE 3.1.1

1. If the required actions and associated completion time of Specification 3.1.A, Actions 1 or 2 or 3 are not met, take the action listed below for the affected trip function as required by Table 3.1.1.

   A. Initiate insertion of operable rods and complete insertion of all operable rods within 12 hours.

   B. Reduce power level to IRM range and place mode switch in the start up position within 6 hours.

   C. Reduce turbine load and close main steam line isolation valves within 6 hours.

   D. Reduce power to less than 30% rated within 4 hours.

2. Permissible to bypass, in refuel and shutdown positions of the reactor mode switch.

3. Deleted.

4. Bypassed when reactor thermal power is less than 30% of rated as indicated by turbine first stage pressure.

5. IRM's are bypassed when APRM's are onscale and the reactor mode switch is in the run position.

6. The design permits closure of any two lines without a scram being initiated.

7. When the reactor is subcritical and the reactor water temperature is less than 212 degrees F, only the following trip functions need to be operable:

   A. Mode switch in shutdown

   B. Manual scram

   C. High flux IRM

   D. Scram discharge instrument volume high level

8. Not required to be operable when primary containment integrity is not required.

9. Not required to be operable when the reactor pressure vessel head is not bolted to the vessel.

TABLE 4.1.1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT FUNCTIONAL TESTS
MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENT AND CONTROL CIRCUITS

	Group (2)	Functional Test	Minimum Frequency (3)
Mode Switch in Shutdown	A	Place Mode Switch in Shutdown	Each refueling outage.
Manual Scram	A	Trip Channel and Alarm	Every 3 months.
RPS Channel Test Switch	A	Trip Channel and Alarm	Once/week or after channel maintenance.
IRM			
High Flux	C	Trip Channel and Alarm (4)	One per week during refueling or startup and before each startup.
Inoperative	C	Trip Channel and Alarm (4)	One per week during refueling or startup and before each startup.
APRM			
High Flux	B1	Trip Output Relays (4)	Once/3 months
Inoperative	B1	Trip Output Relays (4)	Once/3 months
Downscale	B1	Trip Output Relays (4)	Once/3 months
Flow Bias	B1	Calibrate Flow Bias Signal (4)	Once/month
High Flux in Startup or Refuel	C	Trip Output Relays (4)	One per week during refueling or startup and before each startup.
High Reactor Pressure (6)	B2	Trip Channel and Alarm (4)	Once/3 months
High Drywell Pressure (6)	B2	Trip Channel and Alarm (4)	Once/3 months
Reactor Low Water Level (5)(6)	B2	Trip Channel and Alarm (4)	Once/3 months

TABLE 4.1.1 (Continued)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT FUNCTIONAL TESTS
MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENT AND CONTROL CIRCUITS

	Group (2)	Functional Test	Minimum Frequency (3)
High Water Level in Scram Discharge Instrument Volume	A	Trip Channel and Alarm	Once/3 months
Turbine Condenser Low Vacuum (6)	B2	Trip Channel and Alarm (4)	Once/3 months
Main Steam Line High Radiation	B1	Trip Channel and Alarm (4)	Once/3 months
Main Steam Line Isolation Valve Closure	A	Trip Channel and Alarm	Once/3 months
Turbine Control Valve EHC Oil Pressure	A	Trip Channel and Alarm	Once/3 months
Turbine First Stage Pressure Permissive	A	Trip Channel and Alarm	Once/3 months
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Once/3 months

NOTES FOR TABLE 4.1.1

1. Deleted.

2. A description of each of the groups is included in the Bases of this Specification.

3. Functional tests are not required on the part of the system that is not required to be operable or are tripped.

   If tests are missed on parts not required to be operable or are tripped, then they shall be performed prior to returning the system to an operable status.

4. This instrumentation is exempted from the instrument channel test definition. This instrument channel functional test will consist of injecting a simulated electrical signal into the measurement channels.

5. The water level in the reactor vessel will be perturbed and the corresponding level indicator changes will be monitored. This perturbation test will be performed every month after completion of the functional test program.

6. These channels consist of analog transmitters, indicators and electronic trip units. Instrument checks shall be performed once per day.

TABLE 4.1.2

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Instrument Channel	Group (1)	Calibration	Minimum Frequency (2)
IRM High Flux	C	Comparison to APRM on Controlled Shutdown	Maximum frequency once per week.
APRM High Flux			
Output Signal	B1	Heat Balance	Twice per week.
Flow Bias Signal	B1	With Standard Pressure Source	Every eighteen months.
LPRM Signal	B1	TIP System Traverse	Every 6 weeks.
High Reactor Pressure	B2	Standard Pressure Source	Once per operating cycle.
High Drywell Pressure	B2	Standard Pressure Source	Once per operating cycle.
Reactor Low Water Level	B2	Pressure Standard	Once per operating cycle.
High Water Level in Scram Discharge Instrument Volume	A	Water Column	Every refueling outage.
Turbine Condenser Low Vacuum	B2	Standard Vacuum Source	Once per operating cycle.
Main Steam Line Isolation Valve Closure	A	Note (5)	Note (5)
Main Steam Line High Radiation	B1	Standard Current Source (3)	Every 3 months.
Turbine First State Pressure Permissive	A	Standard Pressure Source	Every 6 months.

TABLE 4.1.2 (Cont'd.)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT CALIBRATION
MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

Instrument Channel	Group (1)	Calibration	Minimum Frequency (2)
Turbine Control Valve Fast Closure Oil Pressure Trip	A	Standard Pressure Source	Once per operating cycle.
Turbine Stop Valve Closure	A	Note (5)	Note (5)

NOTES FOR TABLE 4.1.2

1. A description of these groups is included in the bases of this Specification.

2. Calibration test is not required on the part of the system that are not required to be operable or are tripped but is required prior to return to service.

3. The current source provides an instrument channel alignment. Calibration using a radiation source shall be made each refueling outage.

4. Deleted.

5. Physical inspection and actuation of these position switches will be performed during the refueling outages.

BASES

The reactor protection system automatically initiates a reactor scram to:

1. Preserve the integrity of the fuel cladding.

2. Preserve the integrity of the reactor coolant system.

3. Minimize the energy which must be absorbed following a loss of coolant accident, and prevent inadvertent criticality.

When there is not fuel in the reactor, the scram serves no function; therefore, the reactor protection system is not required to be operable.

Allowed out of service times for repair and surveillance testing for Reactor Protection System Instrumentation have been determined in accordance with General Electric report NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," General Electric Company, March 1988.

The reactor protection system is of the dual channel type (Reference subsection 7.2 FSAR). The system is made up of two independent trip systems, each having two subchannels of tripping devices. Each subchannel has an input from at least one instrument channel which monitors a critical parameter.

The outputs of the subchannels are combined in a 1 out of 2 logic; i.e., an input signal on either one or both the subchannels will cause a trip system trip. The outputs of the trip systems are arranged so that a trip on both systems is required to produce a reactor scram.

This system meets the intent of IEEE - 279 for Nuclear Power Plant Protection Systems. The system has a reliability greater than that of a 2 out of 3 system and somewhat less than that of a 1 out of 2 system.

With the exception of the Average Power Range Monitor (APRM) channels, the Intermediate Range Monitor (IRM) channels, the Main Steam Isolation Valve closure and the Turbine stop valve closure, each subchannel has one instrument channel. When the minimum condition for operation on the number of operable instrument channels per untripped protection trip system is met or if it cannot be met and the affected protection trip system is placed in a tripped condition, the effectiveness of the protection system is preserved.

Three APRM instrument channels are provided for each protection trip system. APRM's A and E operate contacts in one subchannel and APRM's C and E operate contacts in the other subchannel. APRM's B, D and F are arranged similarly in

4.1 Bases

A. Channel functional test frequencies for Reactor Protection System Instrumentation have been determined in accordance with General Electric report NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," General Electric Company, March 1988.

4.1 Bases (Con'td.)

Intentionally Left Blank

4.1 Bases (Con'td.)

Intentionally Left Blank

4.1 Bases (Con'td.)

Calibration frequency of the instrument channel is divided into two groups. These are as follows:

1. Passive type indicating devices that can be compared with like units on a continuous basis.

2. Vacuum tube or semi-conductor devices and detectors that drift or lose sensitivity.

4.1 Bases (Con'td.)

Intentionally Left Blank

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation

A. Primary Containment Isolation Functions

The primary containment isolation instrumentation for each function in Table 3.2.A shall be Operable; and, there shall be two Operable or tripped trip systems for each trip function.

Applicability:

Whenever Primary Containment Integrity is required.

Conditions and Required Actions:
(1)(2)

1. With one or more channels required by Table 3.2.A inoperable, place channel in trip within 12 hours for Items 1, 4, and 5; and, place channel in trip within 24 hours for Items other than 1, 4, and 5.

2. With one or more automatic functions with primary containment isolation function not maintained, restore primary containment isolation capability within one hour.(3)

3. If the required action and associated completion time of Action 1 or 2 are not met, take the action required by Table 3.2.A for the function.

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation

A. Primary Containment Isolation Functions

Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2.A.

System logic shall be functionally tested as indicated in Table 4.2.A.

(1) When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated Function maintains primary containment isolation capability.

(2) 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 3.2.A for that trip function shall be taken.

(3) This Action not applicable to Item 11, Reactor Cleanup System High Temperature.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation (Continued)

B. Core and Containment Cooling Systems - Initiation and Control

Core and containment cooling system initiation and control instrumentation for each Trip Function in Table 3.2.B shall be Operable; and, there shall be two Operable or tripped trip systems for each Trip Function except as noted in Table 3.2.B.

Applicability:

Each Trip Function listed in Table 3.2.B shall be Operable whenever the system(s) it initiates or controls are required to be Operable as specified in Section 3.5.

Conditions and Required Actions:

With one or more channel(s) required by Table 3.2.B inoperable in one or more Trip Functions, take the Action required by Table 3.2.B.

LIMITING CONDITIONS FOR OPERATION

4.2 Protective Instrumentation (Continued)

B. Core and Containment Cooling Systems - Initiation and Control

Instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.2.B.

System logic shall be functionally tested as indicated in Table 4.2.B.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation (Continued)

C. Control Rod Block (CRB) Actuation

The Control Rod Block Actuation instrumentation for each function in Table 3.2.C shall be Operable; and, there shall be two Operable or tripped trip systems for each function except as noted in Table 3.2.C.

Applicability: (1)

The Rod Block Monitor (RBM) shall be Operable with setpoints as required by Table 3.2.C and the Core Operating Limits Report (COLR).

The APRM, IRM and SRM Control Rod Block (CRB) functions shall be Operable whenever the Reactor Mode Switch is in the Startup or Run positions except as follows:

The SRM and IRM functions are not required when the Reactor Mode Switch is in Run.

The APRM and RBM functions are not required to be Operable when the Reactor Mode Switch is in Startup except for the APRM Upscale (Startup Mode) which is not required to be Operable when the Reactor Mode Switch is in Run.

The scram discharge instrument volume high level rod block is required to be Operable whenever the Reactor Mode Switch is in the Startup or Run positions or in the Refuel position whenever more than one control rod is withdrawn.

Conditions and Required Actions:

With one or more channel(s) required by Table 3.2.C inoperable in one or more trip functions, take the Action required by Table 3.2.C.

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation (Continued)

C. Control Rod Block (CRB) Actuation

Instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.2.C.

System logic shall be functionally tested as indicated in Table 4.2.C.

(1) Section 3.3.B.5 is Applicable during operation with a limiting control rod pattern.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation (Continued)

D. Radiation Monitoring Systems-Isolation and Initiation Functions

D.1. Reactor Building Isolation and Standby Gas Treatment System

The Reactor Building Isolation and Standby Gas Treatment System instrumentation for each trip function in Table 3.2.D shall be Operable; and, there shall be two Operable or tripped trip systems for each trip function.

Applicability:

Refuel Area Exhaust Monitors and Reactor Building Area Exhaust Monitors shall be Operable whenever the associated systems are required to be Operable.

Main Stack Monitor shall be Operable whenever the containment is purging and primary containment integrity is required.

Conditions and Required Actions: (1)(2)

1. With one or more channels required by Table 3.2.D inoperable in one or more trip functions, place channel in trip within 24 hours.

2. With one or more automatic Functions with containment isolation capability not maintained, restore containment isolation capability within one hour.

3. If the required actions and associated completion times of Action 1 or 2 are not met, take the Action required by Table 3.2.D

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation (Continued)

D. Radiation Monitoring Systems-Isolation and Initiation Functions

D.1. Reactor Building Isolation and Standby Gas Treatment System

Instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.2.D.

System logic shall be functionally tested as indicated in Table 4.2.D.

(1) When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated Trip Function maintains isolation capability.

(2) 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 3.2.D for that trip Function shall be taken.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation (Continued)

D. Radiation Monitoring Systems-Isolation and Initiation Functions (Continued)

D.2 Main Control Room

The limiting conditions for operation are given in Table 3.2.D.

E. Drywell Leak Detection

The limiting conditions of operation for the instrumentation that monitors drywell leak detection are given in Section 3.6.C, "Coolant Leakage".

F. Surveillance Information Readouts

The limiting conditions for the instrumentation that provides surveillance information readouts are given in Table 3.2.F.

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation (Continued)

D. Radiation Monitoring Systems-Isolation and Initiation Functions (Continued)

D.2 Main Control Room

Instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.2.D.

E. Drywell Leak Detection

Instrumentation shall be calibrated and checked as indicated in Table 4.2.E.

F. Surveillance Information Readouts

Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.

LIMITING CONDITIONS FOR OPERATION

3.2 Protective Instrumentation (Continued)

G. Alternate Rod Insertion (ARI) and Recirculation Pump Trip (RPT)

Two trip systems consisting of two channels per trip system for each instrumentation function that initiates an Alternate Rod Insertion (ARI) scram and trips the reactor recirculation pumps (RPT) in Table 3.2.G shall be Operable; and, the manual and automatic actuation logic and actuation devices of both trip systems shall be Operable.

Applicability:

Whenever the Reactor Mode Switch is in the Startup or Run positions.

Conditions and Required Actions: (1)(2)

1. With one or more channels required by Table 3.2.G inoperable, restore channel to Operable status or place channel in trip within 14 days.(3)

2. With one instrument function with trip capability not maintained, restore trip capability within 72 hours.

3. With both instrument functions or an actuation device with trip capability not maintained, restore trip capability for one function within 1 hour.

4. If the required actions and associated completion times of Action 1, 2 or 3 are not met, place the reactor in shutdown or refuel mode within 8 hours.

SURVEILLANCE REQUIREMENTS

4.2 Protective Instrumentation (Continued)

G. Alternate Rod Insertion and Recirculation Pump Trip

Each RPT and ARI instrumentation channel shall be demonstrated Operable by the performance of the Instrument Check, Instrument Functional Test, Channel Calibration and Logic System Functional Test at the Frequencies shown in Table 4.2.G.

(1) When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated Trip Function maintains ARI/RPT trip capability.

(2) 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 Condition 4 for that trip Function shall be taken.

(3) The action of placing the channel in trip is not applicable if the inoperable channel is the result of an inoperable breaker.

Table 3.2.A

INSTRUMENTATION THAT INITIATES PRIMARY CONTAINMENT ISOLATION

Item	Minimum No. of Operable Instrument Channels per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design	Action (2)
1	2 (6)	Reactor Low Water Level	≥ 0" Indicated Level (3)	4 Inst. Channels	A
2	1	Reactor High Pressure (Shutdown Cooling Isolation)	≤ 75 psig	2 Inst. Channels	D
3	2	Reactor Low-Low-Low Water Level	at or above -160" indicated level (4)	4 Inst. Channels	A
4	2 (6)	High Drywell Pressure	≤ 2 psig	4 Inst. Channels	A
5	2	High Radiation Main Steam Line Tunnel	≤ 15 X Normal Rated Full Power Background (8)	4 Inst. Channels	B
6	2	Low Pressure Main Steam Line	≥ 850 psig (7)	4 Inst. Channels	B
7	2 (5)	High Flow Main Steam Line	≤ 140% of Rated Steam Flow	4 Inst. Channels	B
8	2	Main Steam Line Tunnel Exhaust Duct High Temperature	≤ 200 Deg. F (9)	4 Inst. Channels	B

Table 3.2.A

INSTRUMENTATION THAT INITIATES PRIMARY CONTAINMENT ISOLATION

Item	Minimum No. of Operable Instrument Channels per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design	Action (2)
9	2	Main Steam Line Leak Detection High Temperature	≤ 200 Deg. F	4 Inst. Channels	B
10	1	Reactor Cleanup System High Flow	≤ 300% of Rated Flow	2 Inst. Channels	C
11	1	Reactor Cleanup System High Temperature	≤ 200 Deg. F	1 Inst. Channels	E
12	2	Reactor Pressure (Feedwater Flush System Interlock)	≤ 600 psig	4 Inst. Channels	F

NOTES FOR TABLE 3.2.A

1. Deleted

2. If the required actions and associated completion time of Specification 3.2.A, Actions 1 or 2 are not met, take the action listed below for the affected Trip Function as required by Table 3.2.A.

   A. Initiate an orderly shutdown and have the reactor in Cold Shutdown Condition in 24 hours.

   B. Initiate an orderly load reduction and have Main Steam Lines isolated within 12 hours.

   C. Isolate Reactor Water Cleanup System within 1 hour.

   D. Isolate Shutdown Cooling within 1 hour.

   E. Isolate Reactor Water Cleanup Filter Demineralizers unless the following provision is satisfied. The RWCU Filter Demineralizer may be used (the isolation overridden) to route the reactor water to the main condenser or waste surge tank, with the high temperature trip inoperable for up to 48 hours, provided the water inlet temperature is monitored once per hour and confirmed to be below 180 degrees F.

   F. Isolate Feedwater Flush System within 1 hour.

3. Instrument setpoint corresponds to 538 inches above vessel zero.

4. Instrument setpoint corresponds to 378 inches above vessel zero.

5. Two required for each steam line.

6. These signals also start SBGTS and initiate secondary containment isolation.

7. Only required in Run Mode (Interlocked with Mode Switch).

8. An alarm will be tripped in the control room to alert the control room operators to an increase in the main steam line tunnel radiation level.

TABLE 3.2.B
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 (14) (15)	Reactor Low-Low Water Level	≥-48 in. indicated level	4 HPCI & RCIC Inst. Channels	Initiates HPCI & RCIC.
2 (8) (11) (15)	Reactor Low-Low-Low Water Level	≥-160 in. indicated level (4)	4 Core Spray & RHR Instrument Channels 4 ADS Instrument Channels	1. In conjunction with Low Reactor Pressure initiates Core Spray and LPCI. 2. In conjunction with confirmatory low level, High Drywell Pressure, 120 second time delay, and LPCI or Core Spray pump interlock initiates Auto Blowdown (ADS). 3. Initiates starting of Diesel Generators.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 (9) (16)	Reactor High Water Level	≤+45 in. indicated level	2 Inst. Channels	Trips HPCI & RCIC turbines.
1 (8) (15)	Reactor Low Level (inside shroud)	≥+312 in. above vessel zero (2/3 core height)	2 Inst. Channels	Prevents inadvertent operation of containment spray during accident conditions.
2 (8) (15)	Containment High Pressure	1 ⟨P ⟨2 psig	4 Inst. Channels	Prevents inadvertent operation of containment spray during accident conditions.
1 (11) (15)	Confirmatory Low Level	≥+6 in. indicated level	2 Inst. Channels	ADS Permissive.
2 (8) (11) (14) (15)	High Drywell Pressure	≤2 psig	4 Inst. Channels	1. Initiates Core Spray; LPCI; HPCI. 2. Initiates starting of Diesel Generators. 3. Initiates Auto Blowdown (ADS) in conjunction with Low-Low-Low Reactor water level, 120 second time delay, and LPCI or Core Spray pump running.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 (9) (15)	Reactor Low Pressure	400 - 500 psig	4 Inst. Channels	Permissive for opening Core Spray and LPCI Admission valves. Coincident with high drywell pressure, starts LPCI and Core Spray pumps.
2 (9) (15)	Reactor Low Pressure	200 - 250 psig	4 Inst. Channels	Permissive for closing Recirculation Pump Discharge Valve.
1 (13) (16)	Reactor Low Pressure	50 ≤ P ≤ 75 psig	2 Inst. Channels	In conjunction with PCI signal permits closure of RHR (LPCI) injection valves.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 (9) (15)	Core Spray Pump Start Timer	6 ± 1 sec.	4 timers	All pumps - loss of offsite power only.
		13 sec. ± 7% of setting 23 sec. ± 7% of setting	2 timers 2 timers	A & C pumps - offsite power available. B & D pumps - offsite power available.
1 per 4kV bus (7)	480V Emergency Load Center Timer	3 ± 0.5 sec.	4 timers	All timers - loss of offsite power only.
2 (9) (15)	LPCI Pump Start Timer (Four Pumps)	2 sec. ± 7% of setting 8 sec. ± 7% of setting	4 timers 4 timers	LPCI pumps A & B. LPCI pumps C & D.
1 (12) (15)	ADS Actuation Timer	90 ≤t ≤120 seconds	2 timers	In conjunction with Low Reactor Water Level, High Drywell Pressure and LPCI or Core Spray Pump running interlock, initiates ADS.
2 (12) (15)	ADS Bypass Timer	8 ≤t ≤10 minutes	4 timers	In conjunction with Low Reactor Water Level, bypasses high drywell pressure initiation of ADS.
2 (12) (15)	RHR (LPCI) Pump Discharge Pressure Interlock	50 ± 10 psig	4 channels	Defers ADS actuation pending confirmation of Low Pressure Core Cooling system operation (LPCI Pump running interlock).
2 (12) (15)	Core Spray Pump Discharge Pressure Interlock	185 ± 10 psig	4 channels	Defers ADS actuation pending confirmation of Low Pressure Core Cooling system operation (Core Spray Pump running interlock).

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
1 (8) (16)	RHR (LPCI) Trip System bus power monitor	NA	2 Inst. Channels	Monitors availability of power to logic systems.
1 (8) (16)	Core Spray Trip System bus power monitor	NA	2 Inst. Channels	Monitors availability of power to logic systems.
1 (8) (16)	ADS Trip System bus power monitor	NA	3 Inst. Channels	Monitors availability of power to logic systems.
1 (8) (16)	HPCI Trip System bus power monitor	NA	2 Inst. Channels	Monitors availability of power to logic systems.
1 (8) (16)	RCIC Trip System bus power monitor	NA	2 Inst. Channels	Monitors availability of power to logic systems.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
1 (8) (16)	Core Spray Sparger to Reactor Pressure Vessel d/p	1 (plus or minus 1.5) psid	2 Inst. Channels	Alarm to detect core spray sparger pipe break.
2 (10) (15)	Condensate Storage Tank Low Level	Greater than or equal to 5' above tank bottom	2 Inst. Channels	Provides interlock to HPCI pump suction valves.
2 (10) (15)	Suppression Chamber High Level	Less than or equal to 5" above torus midpoint	2 Inst. Channels	Transfers HPCI pump suction to suppression chamber.
2 (10) (15)	Condensate Storage Tank Low Level	Greater than or equal to 5' above tank bottom	2 Inst. Channels	Transfers RCIC pump suction to suppression chamber.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
1 (13) (15)	RCIC Turbine High Flow	≤ 450" H_2O (2)	2 Inst. Channels	
1 (13) (15)	RCIC Turbine High Flow Time Delay	3 ± 1 seconds	2 Inst. Channels	
2 (13) (15)	RCIC Turbine Compartment Wall	≤ 200 deg. F (2)	4 Inst.)) 16 Inst.	
6 (13) (15)	RCIC Steam Line Area Temp.	≤ 200 deg. F (2)	) 12 Inst.)	
2 (13) (15)	RCIC Steam Line Low Pressure	100 〉 p 〉 50 psig (2)	4 Inst.	
1 (13) (15)	HPCI Turbine Steam Line High Flow	≤ 225" H_2O (3)	2 Inst. Channels	
1 (13) (15)	HPCI Turbine High Flow Time Delay	3 ± 1 seconds	2 Inst. Channels	

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Inst. Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
4 (5) (13) (15)	HPCI Steam Line Low Pressure	100 ⟩p ⟩50 psig (3)	4 Inst.	
2 (13) (15)	HPCI Turbine Compartment Temperature	≤200 deg. F (3)	4 Inst.)))	
4 (13) (15)	HPCI Steam Line Area Temperature	≤200 deg. F (3)	8 Inst.)) 16 Inst.	
2 (13) (15)	HPCI/RHR Valve Station Area Temperature	≤200 deg. F (3)	4 Inst.))	
1 (1)	LPCI Cross-Connect Position	NA	1 Inst.	Initiates annunciation when valve is not closed.
1 per 4 kV bus (1)	4 kV Emergency Bus Undervoltage Relay (HGA)	25% (±5%) of Rated Voltage		1. Trips all loaded breakers. 2. Fast transfer permissive. 3. Dead bus start of diesel.
1 per 4 kV bus (1)	4 kV Emergency Bus Sequential Loading Relay (SV)	95% (+0%, -10%) of Rated Voltage		Permits sequential starting of vital loads.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 per 4 kV bus (1)	Emergency Transformer Undervoltage (IAV) (Inverse time-voltage)	60% (±5%) of rated voltage. Test at zero volts in 1.8 seconds (±10%).		1. Trips emergency transfer feed to 4kV emergency bus. 2. Fast transfer permissive.
2 per 4 kV bus (1)	Degraded voltage (27N) ("non-LOCA" relay)	98% of rated voltage ±0.3% of setting (4077 volts ± 12 volts) 0.9 - 1.1 second internal time delay 60 second ± 5% (±3 sec.) time delay		1. Trips emergency transformer feed to 4kV emergency bus. 2. Fast transfer permissive.
2 per 4 kV bus (1)	Degraded voltage (27N) ("LOCA" relay)	89% of rated voltage ±0.3% of setting (3702 volts ± 11 volts) 0.9 - 1.1 second internal time delay 9 second ± 7%(±0.6 sec.) time delay		1. Trips emergency transformer feed to 4kV emergency bus. 2. Fast transfer permissive. 3. Safety injection signal required.

TABLE 3.2.B (continued)
INSTRUMENTATION THAT INITIATES OR CONTROLS
THE CORE AND CONTAINMENT COOLING SYSTEMS

Minimum No. of Operable Instrument Channels per Trip System (ACTION)	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Remarks
2 per 4 kV bus (1)	Emergency Transformer Degraded voltage (Inverse time - voltage). (CV-6)	87% (±5%) of Rated Voltage. Tests at 2940 volts in 30 seconds (±10%)		1. Trips emergency transformer feed to 4kV emergency bus. 2. Fast transfer permissive.

NOTES FOR TABLE 3.2.B

1. With one or more required channel(s) inoperable in one or more Trip Functions, place channel in trip within one hour or the reactor shall be placed in the Cold Shutdown Condition within 24 hours.

2. Close isolation valves in RCIC subsystem.

3. Close isolation valves in HPCI subsystem.

4. Instrument setpoint corresponds to 378 inches above vessel zero.

5. HPCI has only one trip system for these sensors.

6. Deleted

7. The failure of a 480V Emergency Load Center timer could result in the failure of a 480V Emergency Load Center to re-energize following the loss of one or both offsite sources. Therefore, Technical Specification 3.9.B.7 will apply when a 480V Emergency Load Center timer is not Operable.

8. With one or more required channel(s) inoperable in one or more Trip Functions:
   1. Within 24 hours, place inoperable channel in trip; and,
   2. Within one hour from discovery of loss of feature initiation capability in both trip systems for feature(s) supported by this trip function, declare supported feature(s) inoperable (See Footnote (1)).
   3. If required actions and associated completion times of Action 1 or 2 are not met, declare associated supported features inoperable immediately.

9. With one or more required channel(s) inoperable in one or more Trip Functions:
   1. Within 24 hours, restore channel to Operable status; and,
   2. Within one hour from discovery of loss of initiation capability in both trip systems for feature(s) supported by this trip function, declare supported feature(s) inoperable(See Footnote (2)).
   3. If required actions and associated completion times of Action 1 or 2 are not met, declare associated supported features inoperable immediately.

10. With one or more required channel(s) inoperable in one or more Trip Functions:
   1. Within 24 hours, place inoperable channel in trip or align affected (HPCI or RCIC) pump suction to suppression pool; and,
   2. Within one hour of discovery of loss of initiation capability, declare affected system (HPCI or RCIC) inoperable If associated pump suction is not aligned to suppression pool.
   3. If required actions and associated completion times of Action 1 or 2 are not met, declare associated system inoperable immediately.

---

(1) Only applicable to the High Drywell Pressure and Reactor Low-Low-Low Water Level functions.

(2) Not applicable to Reactor High Water level Function.

11. With one or more required channel(s) inoperable in one or more Trip Functions:
    1. Within one hour from discovery of loss of ADS initiation capability in both trip systems, declare ADS valves inoperable; and,
    2. Within 96 hours from discovery of inoperable channel concurrent with HPCI or RCIC inoperable, place inoperable channel in trip; and,
    3. Within 8 days from discovery of inoperable channel if both HPCI and RCIC are Operable, place inoperable channel in trip.
    4. If required actions and associated completion times of Action 1 or 2 or 3 are not met, declare ADS inoperable immediately.

12. With one or more required channel(s) inoperable in one or more Trip Functions:
    1. Within one hour from discovery of loss of ADS initiation capability in both trip systems, declare ADS valves inoperable; and,
    2. Within 96 hours from discovery of inoperable channel concurrent with HPCI or RCIC inoperable, restore channel to Operable status; and,
    3. Within 8 days from discovery of inoperable channel if both HPCI and RCIC are Operable, restore channel to Operable status.
    4. If required actions and associated completion times of Action 1 or 2 or 3 are not met, declare ADS inoperable immediately.

13. With one or more required channel(s) inoperable in one or more Trip Functions:
    1. Within 24 hours, place channel in trip; and,
    2. Within one hour from discovery of one or more automatic functions with primary containment isolation capability not maintained, restore primary isolation capability.
    3. If required actions and associated completion times of Action 1 or 2 are not met, isolate affected penetration flow path(s) within one hour.

14. With one or more required channel(s) inoperable in one or more Trip Functions:
    1. Within 24 hours, place inoperable channel in trip; and,
    2. Within one hour from discovery of loss of system (HPCI or RCIC) initiation capability, declare affected system (HPCI or RCIC) inoperable.
    3. If required actions and associated completion times of Action 1 or 2 are not met, declare affected system (HPCI or RCIC) inoperable immediately.

15. When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of required Actions may be delayed for up to 6 hours provided associated Trip Function maintains trip capability.

16. When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of required Actions may be delayed for up to 6 hours.

TABLE 3.2.C
INSTRUMENTATION THAT INITIATES CONTROL ROD BLOCKS

Minimum No. of Operable Instrument Channels Per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design	Action
4 (2)	APRM Upscale (Flow Biased)	(0.66W+59%-0.66ΔW) (Clamp at 108% max)	6 Inst. Channels	(10) (14)
4	APRM Upscale (Startup Mode)	≤ 12%	6 Inst. Channels	(10) (14)
4	APRM Downscale	≥ 2.5 indicated on scale	6 Inst. Channels	(10) (14)
1 (7) (11) (13)	Rod Block Monitor (Power Biased)	(RTP ≥85%), S_{RB} ≤HTSP (65% ≤RTP <85%), S_{RB} ≤ITSP (30% ≤RTP <65%), S_{RB} ≤LTSP	2 Inst. Channels	(12) (14)
1 (7) (11) (13)	Rod Block Monitor Downscale	≥ DTSP	2 Inst. Channels	(12) (14)
6	IRM Downscale (3)	≥ 2.5 indicated on scale	8 Inst. Channels	(10)
6	IRM Detector not in Startup Position	(8)	8 Inst. Channels	(10)
6	IRM Upscale	≤ 108 indicated on scale	8 Inst. Channels	(10)
2 (5)	SRM Detector not in Startup Position	(4)	4 Inst. Channels	(1)
2 (5) (6)	SRM Upscale	≤ 10^5 counts/sec.	4 Inst. Channels	(1)
1 (15)	Scram Discharge Instrument Volume High Level	≤ 25 gallons	1 Inst. Channel	(9)

NOTES FOR TABLE 3.2.C

1. If the first column cannot be met for one of the two trip systems, this condition may exist for up to seven days provided that during that time the operable system is functionally tested immediately and daily thereafter; if this condition lasts longer than seven days, the system shall be tripped. If the first column cannot be met for both trip systems, the systems shall be tripped.

2. W = Loop Recirculation flow in percent of design.

   Trip level setting is in percent of rated power (3293 MWt).

   ΔW is the difference between two loop and single loop effective recirculation drive flow rate at the same core flow. During single loop operation, the reduction in trip setting is accomplished by correcting the flow input of the flow biased rod block to preserve the original (two loop) relationship between the rod block setpoint and recirculation drive flow. $\Delta W = 0$ for two loop operation.

3. IRM downscale is bypassed when it is on its lowest range.

4. This function is bypassed when the count rate is $\geq$ 100 cps.

5. One of the four SRM inputs may be bypassed.

6. This SRM function is bypassed when the IRM range switches are on range 8 or above.

7. The trip is bypassed when the reactor power is $\leq$ 30%.

8. This function is bypassed when the mode switch is placed in Run.

NOTES FOR TABLE 3.2.C (Cont.)

9. If the number of operable channels is less than required by the minimum operable channels per trip function requirement, place the inoperable channel in the tripped condition within twelve hours.

10. For the Startup (for IRM rod block) and the Run (for APRM rod block) positions of the Reactor Mode Selector Switch and 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.

11. The values of HTSP, ITSP, LTSP and DTSP are specified in the CORE OPERATING LIMITS REPORT.

12. With one or more required Rod Block Monitor channel(s) inoperable:

    a. With one rod block monitor (RBM) channel inoperable, restore RBM channel to Operable status within 24 hours.
    b. If the required action and associated completion time in Action a above are not met, place one RBM channel in trip within 1 hour.
    c. With 2 RBM channels inoperable, place one RBM channel in trip within 1 hour.

13. Section 3.3.B.5 is Applicable during operation with a limiting control rod pattern.

14. When a channel is placed in an inoperable status solely for performance of required Surveillances, initiation of these Actions may be delayed for up to 6 hours provided the associated function maintains control rod block capability.

15. The scram discharge instrument volume has only one trip system.

TABLE 3.2.D
RADIATION MONITORING SYSTEMS THAT INITIATE AND/OR ISOLATE SYSTEMS

Minimum No. of Operable Instrument Channels Per Trip System	Trip Function	Trip Level Setting	Number of Instrument Channels Provided by Design	Action (1)
2	Refuel Area Exhaust Monitor	Upscale, <16 mr/hr	4 Inst. Channels	A or B
2	Reactor Building Exhaust Monitors	Upscale, <16 mr/hr	4 Inst. Channels	B
1	Main Stack Monitor	Upscale, $\leq 10^6$ cps	2 Inst. Channels	C
2 (2)	Main Control Room	Upscale, <400 cpm	4 Inst. Channels	D

Notes for Table 3.2.D

1. Action

   A. Cease operation of the refueling equipment.

   B. Isolate secondary containment and start the standby gas treatment system.

   C. Cease purging of primary containment, and close vent and purge valves greater than 2 inches in diameter.

   D. As described in LCO 3.11.A.5.

2. The trip function is required to be operable whenever secondary containment is required on either unit.

TABLE 3.2.G
INSTRUMENTATION THAT INITIATES ALTERNATE ROD INSERTION AND RECIRCULATION PUMP TRIP

Minimum No. of Operable Instrument Channels Per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design per Trip system
2	Reactor High Pressure	≤ 1120 psig	2
2	Reactor Low-Low Water Level	≥ -48 in. indicated level	2

TABLE 4.2.A

MINIMUM TEST AND CALIBRATION FREQUENCY FOR PCIS

Instrument Channel (5)	Instrument Functional Test	Calibration Frequency	Instrument Check
1) Reactor High Pressure (Shutdown Cooling Permissive)	Once/ 3 months	Once/3 months	None
2) Reactor Low-Low-Low Water Level (7)	Once/3 months (3)	Once/operating cycle	Once/day
3) Main Steam High Temp.	Once/3 months (3)	Once/operating cycle	Once/day
4) Main Steam High Flow (7)	Once/3 months (3)	Once/operating cycle	Once/day
5) Main Steam Low Pressure	Once/3 months	Once/3 months	None
6) Reactor Water Cleanup High Flow	Once/3 months	Once/3 months	Once/day
7) Reactor Water Cleanup High Temp.	Once/3 months	Once/3 months	None
8) Reactor Pressure (Feedwater Flush Permissive)	Once/3 months (3)	Once/operating cycle	Once/day

Logic System Functional Test (4) (6)	Frequency
1) Main Steam Line Isolation Vvs. Main Steam Line Drain Vvs. Reactor Water Sample Vvs.	Once/operating cycle
2) RHR - Isolation Vv. Control Shutdown Cooling Vvs.	Once/operating cycle
3) Reactor Water Cleanup Isolation	Once/operating cycle
4) Drywell Isolation Vvs. TIP Withdrawal Atmospheric Control Vvs. Sump Drain Valves	Once/operating cycle
5) Standby Gas Treatment System Reactor Building Isolation	Once/operating cycle

TABLE 4.2.B
MINIMUM TEST AND CALIBRATION FREQUENCY FOR CSCS

Instrument Channel	Instrument Functional Test	Calibration Frequency	Instrument Check
1) Reactor Water Level (7)	Once/3 months (3)	Once/operating cycle	Once/day
2) Drywell Pressure (7)	Once/3 months (3)	Once/operating cycle	Once/day
3) Reactor Pressure (7)	Once/3 months (3)	Once/operating cycle	Once/day
4) Reactor Pressure - PCIS/LPCI Interlock	Once/3 months	Once/3 months	None
5) Auto Sequencing Timers	NA	Once/operating cycle	None
6) ADS - LPCI or CS Pump Disch. Pressure Interlocks	Once/3 months	Once/3 months	None
7) Trip System Bus Power Monitors	Once/3 months	NA	None
8) Core Spray Sparger d/p	Once/3 months	Once/6 months	Once/day
9) Steam Line High Flow (HPCI & RCIC)	Once/3 months	Once/3 months	None
10) Steam Line High Flow Timers (HPCI and RCIC)	NA	Once/operating cycle	None
11) Steam Line High Temp. (HPCI & RCIC)	Once/3 months (3)	Once/operating cycle	Once/day
12) Safeguards Area High Temp.	Once/3 months	Once/3 months	None

TABLE 4.2.B (continued)
MINIMUM TEST AND CALIBRATION FREQUENCY FOR CSCS

Instrument Channel	Instrument Functional Test	Calibration Frequency	Instrument Check
13) HPCI and RCIC Steam Line Low Pressure	Once/3 months	Once/3 months	None
14) HPCI Suction Source Levels	Once/3 months	Once/3 months	None
15) 4KV Emergency Power System Voltage Relays (HGA,SV)	Once/operating cycle	Once/5 years	None
16) ADS Relief Valves Bellows Pressure Switches	Once/operating cycle	Once/operating cycle	None
17) LPCI/Cross Connect Valve Position	Once/refueling cycle	N/A	N/A
18) Condensate Storage Tank Level (RCIC) (7)	Once/3 months	Once/operating cycle	Once/day
19) 4KV Emergency Power Source Degraded Voltage Relays (IAV,CV-6,ITE)	Once/month	Once/eighteen months	None

TABLE 4.2.C
MINIMUM TEST AND CALIBRATION FREQUENCY FOR CONTROL ROD BLOCKS ACTUATION

Instrument Channel	Instrument Functional Test	Calibration	Instrument Check
1) APRM - Downscale	Once/3 months (3)	Once/3 months	Once/day
2) APRM - Upscale	Once/3 months (3)	Once/3 months	Once/day
3) IRM - Upscale	(2) (3)	Startup or Control Shutdown	(2)
4) IRM - Downscale	(2) (3)	Startup or Control Shutdown	(2)
5) RBM - Upscale	Once/3 months (3)	Once/6 months	Once/day
6) RBM - Downscale	Once/3 months (3)	Once/6 months	Once/day
7) SRM - Upscale	(2) (3)	Startup or Control Shutdown	(2)
8) SRM - Detector Not In Startup Position	(2) (3)	N/A	(2)
9) IRM - Detector Not In Startup Position	(2) (3)	N/A	(2)
10) Scram Discharge Instrument Volume - High Level	Quarterly	Once/Operating Cycle	N/A

Logic System Functional Test (4) (6)	Frequency
1) System Logic Check	Once/Operating Cycle

Unit 3

TABLE 4.2.D
MINIMUM TEST & CALIBRATION FREQUENCY FOR RADIATION MONITORING SYSTEMS

Instrument Channels	Instrument Functional Test	Calibration	Instrument Check (2)
1) Refuel Area Exhaust Monitors - Upscale	Once/3 months	Once/3 months	Once/day
2) Reactor Building Area	Once/3 months	Once/3 months	Once/day
3) Main Stack Monitor	Once/3 months	Once/12 months as described in 4.8.C.4.a	Once/day
4) Main Control Room	Once/3 months	Once/18 months as described in 4.11.A.5	Once/day

Logic System Functional Test (4) (6)	Frequency
1) Reactor Building Isolation	Once/Operating Cycle
2) Standby Gas Treatment System Actuation	Once/Operating Cycle

Unit 3

TABLE 4.2.E
MINIMUM TEST & CALIBRATION FREQUENCY FOR DRYWELL LEAK DETECTION

Instrument Channel	Instrument Functional Test	Calibration Frequency	Instrument Check
1) Equipment Drain Sump Flow Integrator	Once/month	Once/3 months	Once/day
2) Floor Drain Sump Flow Integrator	Once/month	Once/3 months	Once/day
3) Drywell Atmosphere Radioactivity Monitor	Once/month	Once/3 months	Once/day

NOTES FOR TABLES 4.2.A THROUGH 4.2.F

1. Deleted.

2. Functional tests, calibrations and instrument checks are not required when these instruments are not required to be operable or are tripped. Functional tests shall be performed before each startup with a required frequency not to exceed once per week. Calibrations shall be performed within 24 hours before each startup or controlled shutdown with a required frequency not to exceed once per week. Instrument checks shall be performed at least once per day during those periods when the instruments are required to be operable.

3. This instrumentation is excepted from the functional test definition. The functional test will consist of injecting a simulated electrical signal into the measurement channel. These instrument channels will be calibrated using simulated electrical signals.

4. Simulated automatic actuation shall be performed once each operating cycle. Where possible, all logic system functional tests will be performed using the test jacks.

5. Reactor low water level, high drywell pressure and high radiation main steam line tunnel are not included on Table 4.2.A since they are tested on Table 4.1.2.

6. The logic system functional tests shall include a calibration of time delay relays and timers necessary for proper functioning of the trip systems.

7. These channels consist of analog transmitters, indicators and electronic Trip units.

TABLE 4.2.G

Unit 3

MINIMUM TEST AND CALIBRATION FREQUENCY FOR ALTERNATE ROD INSERTION AND RECIRCULATION PUMP TRIP

Instrument Channel	Instrument Check (1)	Instrument Functional Test (1)	Calibration Frequency (1)
Reactor High Pressure	Once/day	Once/3 months	Once/Operating Cycle
Reactor Low-Low Water Level	Once/day	Once/3 months	Once/Operating Cycle

Logic System Functional Test (2)	Frequency
Alternate Rod Insertion/Recirculation Pump Trip	Once/3 months
Alternate Rod Insertion/Recirculation Pump Trip including air venting and breaker trip (3)	Once/Operating Cycle

Notes:

1. In accordance with Table 4.2.B. These instrument channels are the same ones used by the Core and Containment Cooling Systems.
2. The recirculation pumps need not be tripped.
3. This test, performed while shutdown, will include venting of the scram air header and tripping of the recirculation pump breakers. The test will also verify operability of the manual actuation logic.

3.2 BASES

In addition to reactor protection instrumentation which initiates a reactor scram, protective instrumentation has been provided which initiates action to mitigate the consequences of accidents which are beyond the operator's ability to control, or terminates operator errors before they result in serious consequences. This set of specifications provides the limiting conditions of operation for the primary system isolation function, initiation of the core cooling systems, control rod block and standby gas treatment systems. The objectives of the Specifications are (i) to assure the effectiveness of the protective instrumentation when required even during periods when portions of such systems are out-of-service for maintenance, and (ii) to prescribe the trip settings required to assure adequate performance.

Channel functional test frequencies and allowed out of service times for repair and surveillance testing for Isolation Instrumentation have been determined in accordance with General Electric reports NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," and NEDC-31677P-A,"Technical Specification Improvement Analyses for BWR Isolation Actuation Instrumentation." The AOT is 12 hours for Table 3.2.A Items 1, 4, and 5 because these items have instrumentation that is common to the RPS. Other Table 3.2.A Items have an AOT of 24 hours.

Channel functional test frequencies and allowed out of service times for repair and surveillance testing for ECCS Actuation Instrumentation have been determined in accordance with General Electric reports NEDC-30936P-A,"BWR Owners' Group Technical Specification Improvement Methodology with Demonstration for BWR ECCS Actuation Instrumentation," Parts 1 and 2, and RE-022,"Technical Specification Improvement Analysis for the Emergency Core Cooling System Actuation Instrumentation for Peach Bottom Atomic Power Station, Units 2 and 3."

Channel functional test frequencies and allowed out of service times for repair and surveillance testing for miscellaneous instruments have been determined in accordance with General Electric report GENE-770-06-1,"Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," and the associated NRC Safety Evaluation Report dated July 21, 1992.

Channel functional test frequencies and allowed out of service times for repair and surveillance testing for RCIC instrumentation have been determined in accordance with

3.2 BASES (continued)

General Electric report GENE-770-06-2,"Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," and the associated NRC Safety Evaluation Report dated September 13, 1991.

Some of the settings on the instrumentation that initiate or control core and containment cooling have tolerances explicitly stated where the high and low values are both critical and may have a substantial effect on safety. The set points of other instrumentation, where only the high or low end of the setting has a direct bearing on safety, are chosen at a level away from the normal operating range to prevent inadvertent actuation of the safety system involved and exposure to abnormal situations.

Actuation of primary containment valves is initiated by protective instrumentation shown in Table 3.2.A which senses the conditions for which isolation is required. Such instrumentation must be available whenever primary containment integrity is required.

The instrumentation which initiates primary system isolation is connected in a dual bus arrangement.

The low water level instrumentation set to trip at zero inches indicated level (538 inches above vessel zero) closes all isolation valves except those in Groups 1, 4 and 5. Details of valve grouping and required closing times are given in Specification 3.7. For valves which isolate at this level, this trip setting is adequate to prevent the core from being uncovered in the case of a break in the largest line assuming a 60 second valve closing time. Required closing times are less than this.

The low-low reactor water level instrumentation is set to trip when reactor water level is minus 48 inches indicated level (490 inches above vessel zero). This trip initiates HPCI, RCIC, Alternate Rod Insertion and trips the recirculation pumps. The low-low-low reactor water level instrumentation is set to trip when the reactor water level is minus 160 inches indicated level (378 inches above vessel zero). This trip closes Main Steam Line Isolation Valves, Main Steam Drain Valves and Recirc Sample Valves (Group 1), activates the remainder of the CSCS subsystem, and starts

3.2 BASES (Cont'd)

Pressure instrumentation is provided to close the main steam isolation valves in RUN Mode when the main steam line pressure drops below 850 psig. The Reactor Pressure Vessel thermal transient due to an inadvertent opening of the turbine bypass valves when not in the RUN Mode is less severe than the loss of feedwater analyzed in section 14.5 of the FSAR; therefore, closure of the Main Steam isolation valves for thermal transient protection when not in RUN Mode is not required.

The HPCI high flow and temperature instrumentation are provided to detect a break in the HPCI steam piping. Tripping of this instrumentation results in actuation of HPCI isolation valves. Tripping logic for the high flow is 1 out of 2 logic. Temperature is monitored at four (4) locations with four (4) temperature sensors at each location. Two (2) sensors at each location are powered by "A" DC control bus and two (2) by "B" DC control bus. Each pair of sensors, e.g., "A" or "B" at each location are physically separated and the tripping of either "A" or "B" bus sensor will actuate HPCI isolation valves. The trip settings of ≤ 300% of design flow for high flow and 200 degrees F for high temperature are such that core uncovery is prevented and fission product release is within limits.

The RCIC high flow and temperature instrumentation are arranged the same as that for the HPCI. The trip setting of ≤ 300% for high flow and 200 degrees F for temperature are based on the same criteria as the HPCI.

The Reactor Water Cleanup System high flow instrumentation is arranged similar to that for the HPCI System. The trip settings are such that core uncovery is prevented and fission product release is maintained within limits. The high temperature instrumentation downstream of the non-regenerative heat exchanger is provided to protect the ion exchange resin in the demineralizer from damage due to high temperature. Such damage could impair the resins' ability to remove impurities from the primary coolant and possibly result in the release of previously captured impurities back into the coolant in large concentrations.

The instrumentation which initiates CSCS action is arranged in a dual bus system. As for other vital instrumentation arranged in this fashion, the Specification preserves the effectiveness of the system even during periods when maintenance or testing is being performed. An exception to this is when logic functional testing is being performed.

The control rod block functions are provided to prevent excessive control rod withdrawal so that MCPR does not decrease to the fuel cladding integrity safety limit. The trip logic for this function is 1 out of n: e.g., any trip on one of 6 APRM's, 8 IRM's, or 4 SRM's will result in a rod block.

The minimum instrument channel requirements assure sufficient instrumentation to assure the single failure criteria is met.

4.2 BASES

The instrumentation listed in Tables 4.2.A through 4.2.F will be functionally tested and calibrated at regularly scheduled intervals.

4.2 BASES

Intentionally Left Blank

4.2 BASES (continued)

Intentionally Left Blank

4.2 BASES (continued)

Intentionally Left Blank

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 203 AND 206 TO FACILITY OPERATING

LICENSE NOS. DPR-44 and DPR-56

PECO ENERGY COMPANY
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION, UNIT NOS. 2 AND 3

DOCKET NOS. 50-277 AND 50-278

1.0 INTRODUCTION

By letter dated September 26, 1994, as supplemented by letters dated January 5, and March 23, 1995, the PECO Energy Company (PECO or the licensee) submitted a request for changes to the Peach Bottom Atomic Power Station (PBAPS), Unit Nos. 2 and 3, Technical Specifications (TSs). The requested changes would extend the surveillance test intervals and allowable out-of service times for the testing and or repair of instrumentation that actuate the Reactor Protection System, Primary Containment Isolation, Core and Containment Cooling systems, Control Rod Blocks, Radiation Monitoring systems and Alternate Rod Insertion/Recirculation Pump Trip. The supplemental letters provided clarifying information and did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

By letter dated September 26, 1994, PECO Energy Company, the licensee for PBAPS, Units 2 and 3, proposed to revise the TS requirements regarding surveillance test intervals (STIs) and allowed outage times (AOTs) for the actuation instrumentation for the following:

TS 3.1.1 Reactor Protection System;
TS 3.2.A Primary Containment Isolation;
TS 3.2.B Core and Containment Cooling Systems;
TS 3.2.C Control Rod Block;
TS 3.2.D Radiation Monitoring Systems;
TS 3.2.E Drywell Leak Detection;
TS 3.2.F Surveillance Information Readouts; and
TS 3.2.G Alternate Rod Insertion and Recirculation Pump Trip.

The proposed AOT and STI changes are based on the most recently approved BWR Owners' Group letters which were used in establishing AOTs and STIs for the new BWR Standard Technical Specifications, NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4." The licensee also provided

9507050429 950606
PDR ADOCK 05000277
P PDR

information regarding plant-specific evaluations which are contained in reports MDE-87-0485-1, "Technical Specification Improvement Analysis for the Reactor Protection System for Peach Bottom Atomic Power Station, Units 2 and 3," dated October 1987 and RE-020, "Technical Specification Improvement Analysis for Emergency Core Cooling System Actuation Instrumentation for Peach Bottom Atomic Power Station, Units 2 and 3," dated December 1986. Additionally, the format and wording of NUREG-1433 were selected to improve the clarity and useability of the PBAPS Technical Specifications. Therefore, incorporation of the extended STIs and AOTs into PBAPS TSs is based on the guidance provided in NUREG-1433.

The proposed changes to the PBAPS TSs fall into three categories.

a. Changes to the minimum surveillance test intervals and maximum allowable out-of-service times for the testing and/or repair of instrumentation. These changes are based on and justified by the results of generic analyses in licensing topical reports (LTRs).

b. Changes to conditions, required actions, and completion times needed to make PBAPS TS requirements for instrumentation consistent with the assumptions used in the analyses in LTRs, and additional changes to conditions, required actions, and completion times needed to make PBAPS TS requirements for instrumentation consistent with the BWR Standard Technical Specifications.

c. Changes that reformat, renumber, and/or reword existing requirements to incorporate the changes described above into the PBAPS plant-specific TSs. These changes are also consistent with and use the same approach and specific requirements in NUREG-1433. The reformatting, renumbering, and rewording resulted in no technical changes (either actual or interpretational) to the PBAPS TSs except where specifically discussed in this evaluation.

NRC Generic Letter (GL) 83-28, Item 4.5.3, required an evaluation of the intervals specified in the TSs for on-line functional testing of the Reactor Protection System (RPS). To complete this evaluation, the BWR Owners' Group (BWROG), in conjunction with the General Electric Company (GE), developed a methodology that evaluates the impact on RPS reliability. The methodology and results of the generic analysis for each major type of actuation instrumentation were published in LTRs. The BWROG sponsored studies by GE to apply probabilistic analytical methods in order to justify an increase in STIs and AOTs for various BWR instrumentation. All proposed STI and AOT changes in accordance with these studies resulted in a series of GE LTRs which have been previously reviewed and approved by the NRC staff. Also, AOTs are provided in accordance with the most recently approved BWROG letters which were used in the development of NUREG-1433. The PBAPS TS changes will permit specified Channel Tests to be conducted quarterly rather than weekly or monthly based on the licensee's commitment to several plant-specific conditions.

2.1 Background

The proposed changes to the TSs extend STIs and AOTs for the testing and/or repair of instrumentation that actuates the Reactor Protection System, Primary Containment Isolation, Core and Containment Cooling Systems, Control Rod Blocks, Radiation Monitoring Systems, and Alternate Rod Insertion-Recirculation Pump Trip in accordance with the following GE LTRs:

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

2. NEDC-30936P-A (Parts 1 and 2), "BWR Owners' Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation)," dated December 1988.

3. NEDC-30851P-A (Supplement 1), "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation," dated October 1988.

4. NEDC-30851P-A (Supplement 2), "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," dated March 1989.

5. NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," dated July 1988.

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

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

2.2 Reactor Protection System (TS 3.1)

The proposed changes to PBAPS TS Section 3.1, Reactor Protection System, are described below.

a. Proposed Limiting Conditions for Operation (LCO) 3.1.A deleted the existing TS statements of Applicability and the Objective (TS 3/4.1) for the Reactor Protection System (RPS) instrumentation that does not establish any requirements or provide any information specific to the RPS. The proposed statements of the LCO 3.1.A and Applicability are consistent with NUREG-1433. These changes improve clarity and establish the numbering and format necessary to support technical changes.

b. Proposed LCO 3.1.A contains a new heading, "Conditions and Required Actions." The proposed change will extend AOTs for RPS instrument channels by inserting required actions and completion times that are consistent with NUREG-1433, Section 3.3.1.1, Reactor Protection System Instrumentation, Conditions A, B, C, and D. To implement this change, the conditions and required actions, which are needed to support the assumptions used in the analysis that justified extending the instrumentation AOTs and STIs, were incorporated into the PBAPS TS. The proposed conditions and required actions satisfy the assumptions and conditions in NEDC-30851P-A. The resulting changes to the existing requirements are described below in Sections 2.1.c through 2.1.h.

c. Proposed LCO 3.1.A, Condition 1: The condition description in Table 3.1.1, Note 1 was moved into the LCO and modified to clarify that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function by changing the wording to "one or more channel(s) required by Table 3.1.1 inoperable in one or more Trip Functions." This change is consistent with the statement in NUREG-1433, Section 3.3.1.1, that allows separate conditional entry for RPS functions.

d. Proposed LCO 3.1.A, Condition 1: The required action for an inoperable channel currently in Table 3.1.1, Note 1, was changed to "place the inoperable channel or associated trip system in trip." The proposed action results in the same condition as tripping the channel. This change improves clarity and is consistent with NUREG-1433.

e. Proposed LCO 3.1.A, Condition 1: The AOT for an inoperable RPS channel currently in Table 3.1.1, Note 1, is extended from "immediately" to "within 12 hours." This change is justified based on staff approval of NEDC-30851P-A and MDE-87-0485-1. The proposed change is consistent with NUREG-1433.

f. Proposed LCO 3.1.A, Condition 2: A condition, "With one or more Trip Functions with one or more channels required by Table 3.1.1 inoperable in both trip systems," is established. The associated required action is to, place a channel in one trip system in trip or place one trip system in trip within 6 hours. This change is more restrictive than the requirement in existing LCO 4.1.C which allows an 8-hour AOT for the same situation. This change is required to satisfy assumptions in NEDC-30851P-A and MDE-87-0485-1. The proposed change is consistent with NUREG-1433.

g. Proposed LCO 3.1.A, Condition 3: A new condition and required action, "With one or more automatic trip functions or two or more manual trip functions (Mode Switch in Shutdown, Manual Scram and RPS Channel Test Switches) with RPS trip capability not maintained, restore RPS trip capability within one hour," was established. This new condition and

required action is necessary to justify extending the AOT (proposed LCO 3.1.A, Condition 1) for an inoperable channel. This change prevents the extended AOT from resulting in an extended loss of trip capability. The PBAPS design for the manual scram functions (Manual Scram and Reactor Mode Switch in Shutdown) differs from the generic BWR 4 in that these functions actuate the scram function using instrument channels (Channels A3 and B3) separate from the channels used to actuate the automatic scram functions (Channels A1, A2, B1, and B2). Therefore, testing the manual scram function does not exercise the automatic function scram contacts as was assumed in NEDC-30851P-A. In MDE-87-0485-1, the licensee states that this difference has no effect on the applicability of NEDC-30851P-A to PBAPS because "each channel has a test switch which is functionally the same as the manual scram switch in the generic model." Therefore, to satisfy the requirement that the manual scram function be exercised weekly to demonstrate the operability of the scram contacts associated with the automatic scram function, the licensee proposed requirements for weekly Channel Functional Testing of the RPS Channel Test Switches. The RPS Channel Test Switches were added to Table 3.1.1 in order to establish appropriate operability requirements and appropriate required actions and completion times for an inoperable channel.

The difference between PBAPS and the generic BWR 4 requires that PBAPS, Units 2 and 3, have TSs governing 3 separate manual scram functions in the control room: Mode Switch in Shutdown; Manual Scram; and the four RPS Channel Test Switches. The PBAPS Mode Switch in Shutdown and Manual Scram have only two channels, i.e., one channel per trip system. Therefore, the loss of a single channel of the Manual Scram or the Mode Switch in Shutdown will result in a loss of function at PBAPS but not in the generic BWR 4 which has 4 channels for these manual functions. The proposed PBAPS TS that will govern loss of trip capability in one of the three manual trip functions (Mode Switch in Shutdown or Manual Scram or RPS Channel Test Switches) will allow 12 hours to restore trip capability for the function as long as trip capability in the other two manual scram functions is maintained. By requiring only two of the three manual scram functions in the control room to maintain trip capability, the proposed PBAPS TS is equivalent to the recommendations in NUREG-1433 in that it will allow the extended AOT to be applied if there is a loss of a channel in either the Manual Scram or the Mode Switch in Shutdown. PBAPS procedures and operator training will be revised to recognize that RPS Test Switches are an alternate manual scram function in the control room. Therefore, the proposed change is equivalent to the requirements for the generic BWR 4 which ensures that a minimum of two manual scram functions in the Control Room are operable, and is consistent with NUREG-1433.

h. Proposed LCO 3.1.A, Condition 4: This change incorporates into the proposed LCO a requirement currently located in Table 3.1.1, Note 1, that specific actions must be performed whenever the required actions and completion times of proposed Actions 1 or 2 or 3 cannot be met. This is an administrative change that improves clarity by establishing a link

between the LCO and the associated required actions in the Notes to Table 3.1.1. This change is consistent with NUREG-1433.

i. Proposed LCO 3.1.A, Conditions and Required Actions: Two notes were added to provide clarification concerning implementation of required actions. The first note will allow initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required surveillances, provided the associated trip function maintains trip capability. This change is more restrictive than the requirement in existing LCO 4.1.C which allows an 8-hour AOT in the same situation. The second note provides clarification that 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 3.1.1 for that trip Function shall be taken. Both notes are justified based on NEDC-30851P-A and are consistent with NUREG-1433.

j. Proposed deletion of existing TS Section 4.1.C: The requirement in existing TS Section 4.1.C allowing the trip system containing an unsafe failure to be placed in the untripped condition for a period of up to 8 hours while surveillance testing is being performed on the other RPS channels is superseded by proposed LCO 3.1.A, Condition 2, and proposed LCO 3.1.A, Note 1 to the conditions and required actions. This change is necessary to make AOTs for RPS consistent with the assumptions in NEDC-30851P-A and MDE-87-0485-1 and the change is consistent with NUREG-1433.

k. Reformatting associated with the proposed changes described above allows all of the requirements of TS Sections 3/4.D.1 and 3/4.1.D.2 to be placed on page 36. Therefore, the requirements of 3/4.1.D.2 will be moved from page 36a to 36. This is an administrative change to improve useability.

l. The temporary note marked with a double asterisk on existing page 36a is deleted. This note specifies that the requirements of TS Sections 3/4.1.D.1 and 3/4.1.D.2 will be "Effective upon installation of the protective trip devices." The referenced protective trip devices were installed during 1988. Therefore, the temporary note is deleted.

m. Proposed change to Table 3.1.1: References to Note 1 in the column headed "Minimum Number of Operable Instruments per Trip System" are deleted because the conditions and required actions associated with inoperable RPS instrument channels are located in proposed LCO 3.1.A, Conditions and Required Actions 1, 2, 3, and 4. The references to Note 1 in the Table 3.1.1 column headed "Action" provides direction to the specific action required for individual trip functions in conjunction with proposed LCO 3.1.A, Condition 4, when the actions and completion times in proposed TS Section 3.1.A cannot be satisfied. This is an administrative change for clarity.

n. Proposed change to Table 3.1.1, Note 1: The existing requirement in Table 3.1.1, Note 1, was relocated to proposed LCO 3.1.A. The conditions and required actions specified in Table 3.1.1, Note 1 were superseded by proposed LCO 3.1.A, Conditions 1, 2, 3, and 4. This is an administrative change for clarity.

o. Proposed change to Table 3.1.1: The proposed change adds the RPS Channel Test switches to Table 3.1.1 to support the changes described in 2.1.g above. The RPS Channel Test switches were added to Table 3.1.1 as Item 18. This function is identified as having 4 instrument channels with 2 channels required per trip system. The requirements for operability and the required actions for an inoperable channel are the same as those currently required for the Manual Scram and the Mode Switch in Shutdown. This change establishes operability requirements and required actions and completion times for the RPS Channel Test switches to satisfy assumptions in MDE-87-0485-1.

p. Proposed change to Table 3.1.1: The proposed change increases the number of required Main Steam Line (MSL) Isolation valve closure channels per trip system from 4 to 8 and increases the number of channels provided by design from 8 to 16 channels. PBAPS, like the generic BWR 4, has eight main steam line isolation valves with 2 valve stem position switches (one associated with each trip system) for each valve. The proposed change defines this configuration as 16 channels (i.e., the number of switches) with 8 channels per trip system and adopts the convention used in NUREG-1433. This ensures that proposed changes to LCO 3.1.A are implemented consistent with NUREG-1433.

q. Proposed change to Table 4.1.1: The minimum frequency specified for the performance of Instrument Channel Functional Tests is extended from once per month (or once per week for APRM Trip Functions and Main Steam Line Isolation Valve Closure Trip) to once every 3 months for the following instruments: APRM Inoperative; APRM Downscale; APRM Flow Bias; High Reactor Pressure; High Drywell Pressure; Reactor Low Water Level; High Water Level in Scram Discharge Volume; Turbine Condenser Low Vacuum; MSL High Radiation; MSL Isolation Valve Closure; Turbine Control Valve EHC Oil Pressure; and Turbine Stop Valve Closure. This change is justified by the analyses in NEDC-30851P-A and is consistent with NUREG-1433.

r. Proposed change to Table 4.1.1: The minimum frequency specified for the performance of Instrument Channel Functional Tests for the RPS Channel Test Switches is increased from "every refueling outage or after channel maintenance" to "once per week or after channel maintenance." This more restrictive change is an assumption in NEDC-30851P-A and a prerequisite for extending RPS AOTs and STIs. The analysis in NEDC-30851P-A determined that RPS failure was insensitive to changes in instrument channel failure rates but was highly sensitive to common cause failures of the scram

contacts and/or operator error during testing. However, the design of the manual scram function at PBAPS differs from the design of the manual scram function in the generic model because scram channels cannot be tripped individually. In MDE-87-0485-1, it was determined that this difference has no effect on the applicability of NEDC-30851P-A to PBAPS because "each channel has a test switch which is functionally the same as the manual scram switch in the generic model." MDE-87-0485-1 also indicates that "the manual scram on separate channels is functionally the same as the manual scram circuit in the generic model." Therefore, the proposed change maintains the Functional Test frequency for the manual scram function at "every 3 months" but increases the frequency for the Functional Test of the RPS Channel Test Switches from "every refueling outage or after channel maintenance" to "once per week or after channel maintenance." The change satisfies the assumptions of NEDC-30851P-A for weekly testing of scram contacts.

s. Proposed change to Table 4.1.1: Note 1 to Table 4.1.1 and References to Note 1 were deleted. Note 1 states that frequency of performance for functional tests is "initially once every month" but that the frequency could be changed based on failure rate data if the proposed change and supporting failure rate data was reviewed and approved by the NRC. NEDC-30851P-A and MDE-87-06-0485-1 document failure rate data, and provide the justification for extending the functional test interval from once per month to once every 3 months. These documents were reviewed and approved by the staff. The conditions that Note 1 identifies for extending the RPS functional test frequency beyond the currently existing interval are satisfied by this submittal and therefore, Note 1 is no longer applicable.

t. Table 3.1.1, Note 1, Action A: The existing action requires initiation of the insertion of operable control rods and completion of this action within 4 hours whenever the trip system cannot be placed in trip within the required completion time for the applicable functions. The proposed change will require completion of insertion within 12 hours. This is equivalent to the NUREG-1433, TS 3.3.1.1, Condition G requirement, to be in Mode 3 within 12 hours under the same conditions.

u. Table 3.1.1, Note 1, Action B: The proposed change decreases the time allowed to reduce power level to the Intermediate Range Monitor (IRM) and place the mode switch in the startup position (i.e., bring the plant to Mode 2) from 8 hours to 6 hours. The proposed change is equivalent to the NUREG-1433, TS 3.3.1.1, Condition F requirement, to be in Mode 2 within 6 hours under the same conditions.

v. Table 3.1.1, Note 1, Action C: The proposed change decreases the time allowed to reduce power level and close the Main Steam Isolation Valves (MSIVs) from 8 hours to 6 hours. The proposed change is equivalent to the

NUREG-1433, TS 3.3.1.1, Condition F requirement, to be in Mode 2 within 6 hours under the same conditions.

w. Table 3.1.1, Note 1, Action D: The proposed change establishes 4 hours as the time allowed to reduce power level to less than 30% whereas no time limit is currently specified. This change eliminates an existing ambiguity. The proposed change is equivalent to the NUREG-1433, TS 3.3.1.1, Condition E requirement, to reduce power within 4 hours under the same conditions.

x. The Bases for TS Section 3/4.1.A were revised to reflect the changes discussed above and to correct typographical errors.

2.3 Primary Containment Isolation Functions (TS 3.2.A)

The changes proposed for PBAPS TS Section 3.2.A, Primary Containment Isolation Functions, are described below.

a. The proposed change deletes the existing statements of Applicability and Objective for Section 3.2, Protective Instrumentation (TS 3/4.2), because these statements do not establish any requirements. The proposed change establishes for each separate category of protective instrumentation, concise and complete statements of the LCO and Applicability which are consistent with NUREG-1433.

   i. The proposed change separates existing LCO 3.2.A into separate statements for the LCO and the Applicability under appropriate headings with no technical changes.

   ii. Proposed LCO 3.2.A clarifies the existing LCO requirement concerning the number of required trip systems by relocating, from Table 3.2.A, Note 1, an existing requirement that there shall be two Operable or tripped trip systems for each Primary Containment Isolation (PCI) Function in Table 3.2.A.

   Each of the changes above are not technical, but merely improve clarity and/or establish the numbering and format necessary to support technical changes. These changes are consistent with NUREG-1433.

b. Proposed LCO 3.2.A contains a new heading, "Conditions and Required Actions." The conditions resulting from an inoperable instrument channel, the associated required actions and the completion times, currently in Table 3.2.A, Note 2, were incorporated as TS Sections 3.2.A.1 through 3.2.A.3. These conditions, required actions, and completion times were modified as necessary to satisfy the assumptions and conditions in NEDC-30851P-A, NEDC-30936P-A, NEDC-30851P-A (Supplement 2) and NEDC-31677P-A

which were used to justify extension of AOTs and STIs for PCI Instrumentation. The proposed conditions, required actions and completion times which are consistent with NUREG-1433, Section 3.3.6.1, Primary Containment Isolation Instrumentation, Conditions A, B, and C.

c. Proposed LCO 3.2.A, Condition 1: The condition description currently in Table 3.2.A, Note 2, was modified to clarify that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function by changing the wording from "if the first column cannot be met for one of the trip systems" to "with one or more channel(s) required by Table 3.2.A inoperable." This change is consistent with the statement in NUREG-1433, Section 3.3.6.1.A. This is an administrative change that improves clarity because there is no change to the existing interpretation of the requirements.

d. Proposed LCO 3.2.A, Condition 1: The required action for an inoperable channel currently in Table 3.2.A, Note 2, was changed from "that trip system shall be tripped" to "place channel(s) in trip." This change is consistent with NUREG-1433, Section, 3.3.6.1.A. This is an administrative change that improves clarity because the proposed required action results in the same condition as tripping the channel and there is no change to the existing interpretation of the requirements.

e. Proposed LCO 3.2.A, Condition 1: The repair AOT for an inoperable Primary Containment Isolation function channel was extended from immediately (interpreted as within one hour from Table 3.2.A, Note 2) to within 12 hours for functions common to RPS (Table 3.2.A, Items 1, 4, and 5); and, within 24 hours for functions common to ECCS and/or not common to RPS or ECCS (Table 3.2.A, Items other than 1, 4, and 5). The AOTs specified for each PCI instrument function are based on the analyses in NEDC-30851P-A, NEDC-30851P-A (Supplement 2), and NEDC-31677P-A. The condition description, required actions and completion time are consistent with NUREG-1433, except Item 5, High Radiation Steam Line Tunnel, which is being maintained at PBAPS even though it is not included in NUREG-1433.

f. Proposed LCO 3.2.A, Condition 2: A new condition, "With one or more automatic functions with primary containment isolation function not maintained," was established. This condition will have required actions that will restore primary containment isolation capability within one hour or, take the action required by the existing Table 3.2.A, Note 2, within one hour for a loss of isolation function. This new condition and required action are necessary because the analyses in NEDC-30851P-A, NEDC-30851P-A (Supplement 2), and NEDC-31677P-A did not consider that extending the AOT could result in an extended loss of trip capability and NEDC-30851P-A (Supplement 2) and NEDC-31677P-A were used to justify

extending AOTs (proposed LCO 3.2.A, Condition 1) for an inoperable channel. The condition description, required actions and completion time are consistent with NUREG-1433.

g. Proposed LCO 3.2.A, Condition 3: This change clarifies and incorporates into the LCO a requirement currently located in Table 3.2.A, Note 2, that specific actions be performed whenever the required actions and completion times of proposed conditions 1 or 2 cannot be met. This is an administrative change that improves clarity because it establishes a link between the LCO and the associated required actions. The required actions specified by proposed Condition 3 are still located in Table 3.2.A (Note 2, Actions A, B, C, D, E and F) and the introductory paragraph was revised to make it consistent with proposed LCO 3.2.A, Condition 3.

h. Proposed LCO 3.2.A, Conditions and Required Actions: Three new notes were added to provide clarification concerning implementation of required actions. The first note will allow initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required surveillances, provided the associated trip function maintains primary containment isolation capability. The second note provides clarification that 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 3.2.A for that trip function shall be taken. Both notes are justified based on NEDC-30851P-A, NEDC-30851P-A (Supplement 2), and NEDC-31677P-A.

   Additionally, a third note specifies that the requirement to restore isolation capability within one hour is not applicable to Item 11, Reactor Cleanup System High Temperature. This exception is acceptable because the reactor cleanup system high temperature function is for equipment protection only (prevents reactor water cleanup system demineralizer resin overheating) and is not assumed in the PBAPS safety analysis.

i. Proposed change to Table 3.2.A, Note 1: References to Note 1 in the column headed "Minimum No. of Operable Instrument Channels per Trip System" on Table 3.2.A were deleted because these requirements regarding the number of trip systems and the applicability were incorporated directly into the statements of the LCO and Applicability in TS Section 3.2.A. This is an administrative change to improve clarity and useability.

j. Proposed change to Table 3.2.A, Note 2: The wording of the condition description and required action in Table 3.2.A, Note 2, was revised from "if the first column cannot be met for one of the trip systems, that trip system shall be tripped or the appropriate action listed below shall be taken" to "if the required actions and associated completion time of

Specification 3.2.A, Actions 1 or 2 are not met, take the action listed below for the affected trip function as required by Table 3.2.A." This is an administrative change necessary to implement the other changes described above in Sections 2.2.b through 2.2.i.

k. Proposed change to Table 4.2.A: The minimum frequency specified for the performance of Instrument Channel Functional Tests is extended from once per month to once every 3 months for the following instruments: Reactor High Pressure (Shutdown Cooling Permissive); Reactor Low-Low-Low Water Level; Main Steam High Temperature; Main Steam High Flow; Main Steam Low Pressure; Reactor Water Cleanup High Flow; Reactor Water Cleanup High Temperature; and Reactor Pressure (Feedwater Flush Permissive). These changes to the STI for Instrument Channel Functional Tests are justified by NEDC-30851P-A (Supplement 2), NEDC-31677P-A, MDE-87-0485-1, and RE-020 and the change is consistent with NUREG-1433, except for Reactor Pressure (Feedwater Flush Permissive) which is being maintained at PBAPS even though it is not included in NUREG-1433.

l. Proposed change to Notes for Tables 4.2.A through 4.2.F: Note 1 of the combined Notes for Tables 4.2.A through 4.2.F and References to Note 1 on Table 4.2.A were deleted. Note 1 states that frequency of performance for functional tests is "initially once every month" but that the frequency could be changed based on failure rate data if the proposed change and supporting failure rate data was reviewed and approved by the NRC. GE LTRs constitute the review and approval of failure rate data and provide the justification for extending functional test intervals from once per month to once every 3 months. Therefore, Note 1 is no longer applicable. Deletion of Note 1 to notes for Tables 4.2.A through 4.2.F and deletion of references to Note 1 on Table 4.2.A is an administrative change.

m. Proposed Table 3.2.A, Note 2, Action B: The proposed change to Note 2, Action B allows 12 hours (instead of 8 hours) to isolate the Main Steam Lines whenever the trip system associated with isolating MSIVs is inoperable and cannot be placed in trip within the required completion time. This change is justified because 12 hours is the completion time in NUREG-1433, Specification 3.3.6.1, Condition D. The proposed change is acceptable because: isolation capability is still provided by the redundant MSIV isolation instrument channels; there is a new concurrent requirement in proposed Condition 2 to isolate the MSL within one hour if automatic MSL isolation capability is lost; the additional 4 hours will allow for a more orderly reduction in power and isolation of the MSL and, the change will not allow continuous operation with plant conditions such that a single failure will preclude the affected isolation function from being performed. As a result, the change does not affect the current analysis assumptions and is consistent with NUREG-1433.

n. Proposed Table 3.2.A, Note 2, Actions C, D and F: The proposed change to Note 2, Actions C, D and F, specifies a completion time of "within one hour" for isolation of the affected penetration whenever the trip system associated with isolating the penetration is inoperable and cannot be placed in trip within the required completion time. The existing requirements do not specify a completion time. This change is consistent with NUREG-1433, Section 3.3.6.1, Condition F.

o. The Bases for TS Section 3/4.2.A were revised to reflect the changes discussed above and to correct typographical errors.

2.4 Core and Containment Cooling Systems (TS 3.2.B)

The changes proposed for PBAPS TS Section 3.2.B, Core and Containment Cooling Systems, are described below.

a. The proposed change deletes the existing statements of Applicability and Objective for Section 3.2, Protective Instrumentation (TS 3/4.2), because these statements, as currently written, do not establish any requirements. The proposed change establishes for each separate category of protective instrumentation, concise and complete statements of the LCO and Applicability which are consistent with NUREG-1433. The changes to the statements of LCO requirements and Applicability for TS Section 3.2.B, Core and Containment Cooling Systems (CCCS), are as follows:

   1. The proposed change creates a new page, 57a, for the CCCS requirements and separates the LCO requirements and the Applicability requirements into separate sections under appropriate headings.

   2. Proposed LCO 3.2.B incorporates and provides additional clarification to an existing requirement in Table 3.2.B, Note 1, that there shall be two Operable trip systems for each function. The proposed LCO states "there shall be two Operable or tripped trip systems for each Trip Function except as noted in Table 3.2.B." These changes clarify that either of the two trip systems can be Operable or tripped and that some of the Trip Functions listed in Table 3.2.B do not have two trip systems per function.

   3. There were no changes to the Applicability requirements other than the reformatting which places the Applicability statement under a new and separate heading.

   The above changes are administrative and provide clarity.

b. Proposed LCO 3.2.B contains a new heading, "Conditions and Required Actions." This change establishes a common description of the conditions associated with inoperable channels for the instruments in Table 3.2.B and directs completion of specific required actions for each function

identified on Table 3.2.B. The proposed section will state, "With one or more channel(s) required by Table 3.2.B inoperable in one or more Trip Functions, take the Action required by Table 3.2.B." This is an administrative change that improves clarity because it establishes a link between the LCO and the associated required actions. This change is consistent with NUREG-1433.

c. Proposed LCO 3.2.B, Conditions and Required Actions: The specific conditions and required actions for inoperable CCCS instrument channels were retained in the Notes to Table 3.2.B because the multiple categories of instruments in Table 3.2.B require different required actions and completion times to satisfy the assumptions in the LTRs. The categories of instruments in Table 3.2.B include: ECCS common to RPS (NEDC-30851P-A); ECCS not common to RPS (NEDC-30936P-A); Containment Isolation common to RPS or ECCS (NEDC-30851P-A (Supplement 2)); Power Monitoring Instruments (NEDC-30936P-A); Undervoltage and Degraded Voltage Instruments (not evaluated in LTRs); and, indication only instrumentation without any actuation function. Separate Conditions and Required Actions for each of these categories are included as Notes to Table 3.2.B to ensure that the assumptions used in LTRs that justified extending the instrumentation AOTs and STIs for each category of instruments were incorporated into this Section. The proposed conditions and required actions are consistent with NUREG-1433, Sections 3.3.1.1, 3.3.5.1, 3.3.5.2, and 3.3.6.1, as appropriate. The resulting changes to the existing requirements are described below in Sections 2.3.d through 2.3.n.

d. Proposed Note 1 to Table 3.2.B: The existing requirement in Table 3.2.B, Note 1, that "there shall be two operable trip systems" for each function in Table 3.2.B was incorporated into the statement of proposed LCO 3.2.B as discussed in Section 2.3.a.ii, above. This is an administrative change to improve clarity and useability.

e. Proposed Note 1 to Table 3.2.B: The proposed change modifies Table 3.2.B and Note 1 to Table 3.2.B so that Note 1 identifies the conditions and required actions for those actuation functions in Table 3.2.B that are not within the scope of analysis of LTRs. These functions include:

4 kV Emergency Bus Undervoltage Relay (HGA)
4 kV Emergency Bus Sequential Loading Relay
Emergency Transformer Undervoltage Relay
Degraded Voltage (27N) (non-LOCA relay)
Degraded Voltage (27N) (LOCA relay)
Emergency Transformer Degraded Voltage Relay

In conjunction with this change, the following changes were made to the conditions and required actions in Note 1:

1. The condition description currently in Table 3.2.B, Note 1, was modified to clarify that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function. This change is consistent with the present interpretation and the approach in NUREG-1433 for similar instrumentation. This is an administrative change that improves clarity because there is no change to the existing interpretation of the requirements.

2. The repair AOTs for inoperable channels for the trip functions listed above were specified as "within one hour." The existing Note 1 does not specify a completion time which is interpreted as the action that is required within one hour. This is an administrative change that improves clarity because there is no change to the existing interpretation of the requirements.

3. Proposed Note 1 maintains the existing requirement to place the reactor in "the Cold Shutdown Condition within 24 hours" if the required action or completion time are not met.

f. Proposed Note 6 to Table 3.2.B: The proposed change deletes Table 3.2.B, Note 6, because it is superseded by proposed Note 10 which is discussed below in Section 2.3.i. Note 6 specifies actions and completion times for the inoperability of an instrument channel that transfers RCIC suction to the suppression pool when there is a condensate storage tank low level. This is an administrative change required to support other proposed changes.

g. Proposed Note 8 to Table 3.2.B: The proposed change adds Note 8 to Table 3.2.B and marks Table 3.2.B. Proposed Note 8 replaces existing Note 1 and establishes conditions, required actions, and completion times for the following subset of trip functions in Table 3.2.B:

   Reactor Low-Low-Low Water Level;
   Reactor Low Level (inside shroud);
   Containment High Pressure;
   High Drywell Pressure;
   RHR (LPCI) Trip System Bus Power Monitor;
   Core Spray Trip System Bus Power Monitor;
   ADS Trip System Bus Power Monitor;
   HPCI Trip System Bus Power Monitor;
   RCIC Trip System Bus Power Monitor; and,
   Core Spray Sparger to Reactor Pressure Vessel d/p.

   The proposed conditions, required actions and completion times in proposed Note 8 satisfy the assumptions and conditions used in NEDC-30936P-A to justify extension of AOTs and STIs for ECCS instrumentation. The proposed conditions and required actions are consistent with NUREG-1433, Section

3.3.5.1, Emergency Core Cooling System Instrumentation, Conditions A, B (except HPCI) and H. The specific changes included in proposed Note 8 are discussed below:

1. The condition description currently in Table 3.2.B, Note 1 was modified to clarify that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function by changing the wording from "if the first column cannot be met for one of the trip systems" to "with one or more required channels inoperable in one or more Trip Functions."

2. The AOTs for inoperable ECCS channels for the trip functions listed above (Note 8, Action 1) were extended to 24 hours from the requirement currently in Table 3.2.B, Note 1, to place the channel in trip immediately (interpreted as within one hour). This change is consistent with NEDC-30936P-A.

3. Specific requirements, Note 8, Actions 2 and 3, were added to prevent the proposed extended AOT from resulting in an extended loss of function since a loss of function was not considered in NEDC-30936P-A.

4. Proposed Note 8 eliminates the requirement currently in Table 3.2.B, Note 1 to place the reactor in "the Cold Shutdown Condition within 24 hours" if the required action or completion time are not met. Proposed Note 8 requires only that the associated supported features be declared inoperable immediately. This change is acceptable because the worst case result of an inoperable channel is that the supported feature or system may not perform its intended function when required. By declaring the supported feature or system inoperable and taking the required actions for that system or feature, the plant is within the bounds of the TSs and approved actions. Additionally, with the supported feature or system inoperable, the inoperable channel is no longer required to be operable. The above is consistent with NUREG-1433.

5. Proposed Note 8, Condition 2, states that "Within one hour from discovery of loss of initiation capability in both trip systems for feature(s) supported by this trip function, declare supported feature(s) inoperable." Proposed Note 8, Condition 2, is modified by footnote (1) which states that the required actions associated with this condition is "only applicable to the High Drywell Pressure and Reactor Low-Low-Low Water Level functions." This change prevents an extended loss of function of ECCS equipment initiated by High Drywell Pressure and Reactor Low-Low-Low Water Level functions but allows operation to continue for 24 hours with loss of functions which prevent inadvertent initiation of containment spray and/or loss

of ECCS bus power monitors. This change is consistent with NUREG-1433, LCO 3.3.5.1, Required Action B.1.

6. The ECCS channels for the trip functions listed above are also modified by proposed Note 15 or 16 that will allow initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required surveillances. Note 15, applied to those instrument functions which actuate CCCS equipment, permit the 6 hour delay in the initiation of required actions only if the associated trip function maintains trip capability. Note 16, applied to those functions which provide indication only, permits the 6 hour delay in the initiation of required actions without qualification.

The proposed changes resulting from the addition of Notes 8, 15, and 16, are justified based on the analyses in NEDC-30936P-A and RE-020 and are implemented consistent with the terminology and approach used in NUREG-1433, Section 3.3.5.1, Emergency Core Cooling System Instrumentation, Conditions A, B (except HPCI), and H.

h. Proposed Note 9 to Table 3.2.B: The proposed change adds Note 9 to Table 3.2.B and marks Table 3.2.B so that proposed Note 9 replaces existing Note 1 and establishes conditions, required actions, and completion times for the following subset of trip functions in Table 3.2.B:

Reactor High Water Level (Trips HPCI & RCIC);
Reactor Low Pressure (400-500 psig);
Reactor Low Pressure (200-250 psig);
Core Spray Pump Start Timer; and,
LPCI Pump Start Timer (Four pumps).

Each of the functions listed above provides an interlock or permissive for an ECCS injection signal.

The changes incorporated in proposed Note 9 are the same as the changes in proposed Note 8 described above except as follows:

1. Proposed Note 8 requires that an inoperable channel be placed in trip (if not restored to Operable) within 24 hours or the associated supported features must be declared inoperable immediately. Proposed Note 9 specifies that an inoperable channel must be restored to Operable within 24 hours or the associated supported features must be declared inoperable immediately. This difference recognizes that, in a one out-of-two taken twice logic, placing an inoperable channel in trip has two consequences: it provides greater assurance that an actuation will occur when required; and, it increases the potential for an inadvertent actuation. Therefore, Note 9 does not permit

continued operation with an inoperable channel in trip for an instrument channel that provides an interlock or permissive because an inadvertent actuation is undesirable. This is consistent with NUREG-1433.

2. Proposed Note 9, Condition 2, states that "Within one hour from discovery of loss of initiation capability in both trip systems for feature(s) supported by this trip function, declare supported feature(s) inoperable." Proposed Note 9, Condition 2 is modified by footnote (2) which states that the required actions associated with this condition is "Not applicable to Reactor High Water Level Function." The proposed Note allows HPCI and/or RCIC to remain Operable for 24 hours following the loss of the functions which stop injection when reactor water level has been re-established. This function is not assumed in any accident analysis. This change is consistent with NUREG-1433, LCO 3.3.5.1, Required Action C.1.

   The proposed conditions and required actions in proposed Note 9 satisfy the assumptions and conditions in NEDC-30936P-A and RE-020 used to justify extension of ECCS AOTs and STIs. The proposed conditions and required actions are consistent with NUREG-1433, Section 3.3.5.1, Emergency Core Cooling System Instrumentation, Conditions A, C and H.

i. Proposed Note 10 to Table 3.2.B: The proposed change adds Note 10 to Table 3.2.B and marks Table 3.2.B so that proposed Note 10 replaces existing Note 1 and establishes conditions, required actions, and completion times for the following subset of trip functions in Table 3.2.B:

   Condensate Storage Tank (CST) Low Level (HPCI);
   Suppression Chamber High Level; and,
   Condensate Storage Tank Low Level (RCIC).

   Proposed Note 10 establishes conditions, required actions and completion times for those functions which transfer the HPCI and RCIC pump suctions from the CST to the suppression pool. Proposed Note 10 replaces existing Note 1 for functions associated with HPCI and replaces Note 6 for the function associated with RCIC. The specific changes that proposed Note 10 makes to the existing required actions for an inoperable channel are discussed below:

   1. The condition description currently in Table 3.2.B, Note 1 (HPCI) and Note 6 (RCIC) were modified to clarify that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function by changing the wording to "with one or more required channel(s) inoperable in one or more Trip Functions."

2. The proposed change modifies the required actions if an inoperable channel cannot be restored or placed in trip within the completion time. The proposed change allows aligning the affected (RCIC or HPCI) pump suction to the suppression pool or declaring the affected system inoperable. Currently, Note 1 requires placing the channel in trip (equivalent to transferring suction to the suppression pool) or requiring a plant shutdown (Note 1 for HPCI) or declaring RCIC inoperable (Note 6 for RCIC). The proposed requirement to declare the affected system (HPCI or RCIC) inoperable is equivalent to or an acceptable alternative to existing Table 3.2.B because both the existing and proposed required action places the plant within the bounds of TS approved actions or in a condition where the inoperable channel(s) is no longer required to be operable. Aligning the pump suction from the CST to the suppression pool is an acceptable alternative required action because it completes the intended function of instruments listed above, and is consistent with NUREG-1433.

3. Proposed Note 10 extends the AOTs for inoperable channels for the trip functions listed above (Action 1) to 24 hours from the existing requirements currently in Table 3.2.B, Notes 1 and 6 to place the channel in trip immediately (interpreted as within one hour). This change for HPCI and RCIC is justified by NEDC-30936P-A and NEDC-31677P-A, respectively.

4. Specific requirements, Note 10, Actions 2 and 3, were added to prevent the proposed extended AOT from resulting in an extended loss of function since an extended loss of function was not considered in the NEDC-30936P-A analysis justifying the extended AOT.

5. The ECCS channels for the trip functions listed above are also modified by proposed Note 15 that allows initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required Surveillances provided the associated trip function maintains trip capability.

The proposed conditions, required actions and completion times in proposed Note 10 satisfy the assumptions and conditions used to justify extension of ECCS AOTs and STIs in NEDC-30936P-A, GENE-770-06-1, GENE-770-06-2, and RE-020. The proposed conditions and required actions are consistent with NUREG-1433, Sections 3.3.5.1, Conditions A, D and H (HPCI) and Sections 3.3.5.2, Conditions A, D and E (RCIC).

j. Proposed Note 11 to Table 3.2.B: The proposed change adds Note 11 to Table 3.2.B and marks Table 3.2.B so that proposed Note 11 establishes

conditions, required actions, and completion times and replaces Note 1 for the following subset of trip functions in Table 3.2.B:

Confirmatory Low Level (ADS permissive);
High Drywell Pressure (ADS);
Reactor Low-Low-Low Water Level (ADS).

The proposed conditions, required actions and completion times in proposed Note 11 adopt the AOTs from NUREG-0123 (previous BWR Standard Technical Specifications), and then add the extended AOTs justified in NEDC-30936P-A. This combination of changes is consistent with NUREG-1433 and satisfies the assumptions in NEDC-30936P-A used in the justification of extensions of ECCS AOTs and STIs for instrumentation that provide actuations or permissives for ADS. These assumptions and conditions include the interrelationship between TS requirements for ADS, HPCI and RCIC. Because of the diversity of sensors available to provide initiation signals for ADS and the redundancy of the core cooling function (HPCI, RCIC and ADS), an allowable out of service time of 8 days has been previously accepted in NUREG-0123 (7 days extended by 24 hours as justified by NEDC-30936P-A). This combination of AOTs is reflected in NUREG-1433, LCO 3.3.5.1, Condition F. If either HPCI or RCIC is inoperable, the AOT is shortened to 96 hours per NUREG-0123 (72 hours extended by 24 hours as justified by NEDC-30936P-A). This combination of AOTs is reflected in NUREG-1433, LCO 3.3.5.1, Condition F. If the status of HPCI or RCIC changes such that the completion time changes from 8 days to 96 hours, the 96 hours begins upon discovery of HPCI or RCIC inoperability and the total time for an inoperable, untripped channel cannot exceed 8 days. The proposed conditions, required actions and completion times are consistent with NUREG-1433, Section 3.3.5.1, Actions A, F and H. The specific changes included in proposed Note 11 are discussed below:

1. The condition description currently in Table 3.2.B, Note 1, was modified to clarify that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function by changing the wording from "if the first column cannot be met for one of the trip systems" to "with one or more required channel(s) inoperable in one or more Trip Functions."

2. The AOT for placing an inoperable channel in trip was extended from the requirement currently in Table 3.2.B, Note 1, to place the channel in trip immediately (interpreted as within one hour) to the following: within 96 hours from discovery of an inoperable channel concurrent with HPCI or RCIC inoperable; and, within 8 days from discovery of an inoperable channel if both HPCI and RCIC are operable. These contingent assumptions are consistent with the assumptions used in NEDC-30936P-A as implemented in NUREG-1433.

3. Specific requirements, Note 11, Actions 1 and 3, were added to prevent the proposed extended AOT from resulting in an extended loss of function since a loss of function was not considered in NEDC-30936P-A.

4. Proposed Note 11 eliminates the requirement currently in Table 3.2.B, Note 1, to place the reactor in "the Cold Shutdown Condition within 24 hours" if the required action or completion time are not met. Proposed Note 10 requires only that ADS valves be declared inoperable immediately. This change is acceptable because the worst case result of an inoperable channel is that ADS may not perform its intended function when required. By declaring ADS valves inoperable and taking the required actions, the plant is within the bounds of the Technical Specifications and approved actions. Additionally, with ADS valves inoperable, the inoperable channel is no longer required to be operable.

5. Finally, the instrument channels for the trip functions listed above are also modified by proposed Note 15 that will allow initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required surveillances. Note 15, applied to those instrument functions which actuate CCCS equipment, permits the 6-hour delay in the initiation of required actions only if the associated trip function maintains trip capability.

The above proposed conditions, required actions and completion times are consistent with NUREG-1433, Section 3.3.5.1, Actions A, F and H.

k. Proposed Note 12 to Table 3.2.B: The proposed change adds Note 12 to Table 3.2.B and marks Table 3.2.B so that proposed Note 12 establishes conditions, required actions, and completion times and replaces Note 1 for the following subset of trip functions in Table 3.2.B:

ADS Actuation Timer;
ADS Bypass Timer;
RHR (LPCI) Pump Discharge Pressure Interlock; and,
Core Spray Pump Discharge Pressure Interlock.

Each of the functions listed above provides an interlock or permissive related to the actuation of ADS.

The changes incorporated in proposed Note 12 are the same as the changes in proposed Note 11 described above except as follows. Proposed Note 11 requires that an inoperable channel be placed in trip (if not restored to Operable) within the AOT (8 days if both HPCI and RCIC are Operable and 96 hours if either HPCI or RCIC is not Operable) or ADS valves must be declared inoperable within one hour. Proposed Note 12 does not permit

operation to continue when the inoperable channel is placed in trip. Instead, Note 12 specifies that an inoperable channel must be restored to Operable within the AOT or ADS valves must be declared inoperable. This difference recognizes that, in a one out-of-two taken twice logic, placing an inoperable channel in trip has two consequences: it provides greater assurance that an actuation will occur when required; and, it increases the potential for an inadvertent actuation. Therefore, Note 12 does not permit continued operation with an inoperable channel in trip for an instrument channel that provides an interlock or permissive because both the failure to actuate and an inadvertent actuation are undesirable.

The proposed conditions and required actions in proposed Note 12 satisfy the assumptions and conditions in NEDC-30936P-A and RE-020 used to justify extension of ECCS AOTs and STIs. The proposed conditions and required actions are consistent with NUREG-1433, Section 3.3.5.1, Emergency Core Cooling System Instrumentation, Conditions A, G and H.

1. Proposed Note 13 to Table 3.2.B: The proposed change adds Note 13 to Table 3.2.B and marks Table 3.2.B so that proposed Note 13 establishes conditions, required actions, and completion times and replaces Note 1 for the following subset of trip functions in Table 3.2.B:

   Reactor Low Pressure ($50 \leq P \leq 75$ psig);
   RCIC Turbine High Flow;
   RCIC Turbine High Flow Time Delay;
   RCIC Turbine Compartment Wall Temperature;
   RCIC Steam Line Area Temperature;
   RCIC Steam Line Low Pressure;
   HPCI Turbine Steam Line High Flow;
   HPCI Turbine High Flow Time Delay;
   HPCI Steam Line Low Pressure;
   HPCI Turbine Compartment Temperature;
   HPCI Steam Line Area Temperature; and,
   HPCI/RHR Valve Station Area Temperature.

   The proposed conditions, required actions and completion times in proposed Note 13 satisfy the assumptions and conditions used in NEDC-31677P-A to justify extension of AOTs and STIs for isolation actuation instrumentation. The proposed conditions and required actions are consistent with NUREG-1433, Section 3.3.6.1, Primary Containment Isolation Instrumentation, Conditions A, B and F. The specific changes included in proposed Note 13 are discussed below:

   1. The condition description currently in Table 3.2.B, Note 1 was modified to clarify that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function by changing the wording from "if the first column cannot be met for one of the trip systems" to "with one or more required channels inoperable in one or more Trip Functions."

2. The AOTs for inoperable isolation actuation channels for the trip functions listed above (Action 1) were extended to 24 hours from the requirement currently in Table 3.2.B, Note 1, to place the channel in trip immediately (interpreted as within one hour). This change is consistent with NEDC-31677P-A.

3. Specific requirements, Note 13, Actions 2 and 3, were added to prevent the proposed extended AOT from resulting in an extended loss of function since a loss of function was not considered in NEDC-30936P-A.

4. Proposed Note 13 eliminates the requirement currently in Table 3.2.B, Note 1, to place the reactor in "the Cold Shutdown Condition within 24 hours" if the required action or completion time are not met. Proposed Note 13 requires only that the penetration flow path with isolation capability not maintained be isolated within 25 (24 + 1) hours. This change is acceptable because the worst case result of an inoperable channel is that the affected penetration will not automatically isolate when required. By isolating the affected penetration flow path and taking the required actions for the affected system, the plant is within the bounds of the Technical Specifications and approved actions. Additionally, with the affected penetration flow path isolated, the inoperable channel is no longer required to be operable.

5. The isolation instrumentation channels for the trip functions listed above are also modified by proposed Note 15 that will allow initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required surveillances. Note 15, applied to those instrument functions which actuate CCCS equipment, permit the 6-hour delay in the initiation of required actions only if the associated Trip Function maintains trip capability.

The proposed changes resulting from the addition of Notes 13 and 15 are justified based on the analysis in NEDC-31677P-A and are consistent with NUREG-1433, Section 3.3.6.1, Conditions B, A and F.

m. Proposed Note 14 to Table 3.2.B: The proposed change adds Note 14 to Table 3.2.B and marks Table 3.2.B so that proposed Note 14 establishes conditions, required actions, and completion times and replaces Note 1 for the Reactor Low-Low Water Level trip function in Table 3.2.B. This function initiates HPCI and RCIC.

The proposed conditions, required actions and completion times in proposed Note 14 satisfy the assumptions and conditions used in NEDC-30936P-A (for HPCI) and GENE-770-06-2 (for RCIC) to justify extension of AOTs and STIs for HPCI and RCIC actuation instrumentation. The proposed conditions and

required actions are consistent with NUREG-1433, Section 3.3.5.1, Emergency Core Cooling System Instrumentation, Conditions A, B and H (for HPCI) and Section 3.3.5.2, Reactor Core Isolation Cooling System Instrumentation, Conditions A, B and E (for RCIC). The specific changes included in proposed Note 14 are discussed below:

1. The condition description currently in Table 3.2.B, Note 1 was modified to clarify that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function by changing the wording from "if the first column cannot be met for one of the trip systems" to "with one or more required channels inoperable in one or more Trip Functions."

2. The AOTs for inoperable HPCI and RCIC initiation channels were extended to 24 hours from the requirement currently in Table 3.2.B, Note 1 to place the channel in trip immediately (interpreted as within one hour). This change is consistent with NEDC-30936P-A and NEDC-31677P-A.

3. Specific requirements, Note 14, Actions 1 and 3, were added to prevent the proposed extended AOT from resulting in an extended loss of function since a loss of function was not considered in NEDC-30936P-A and NEDC-31677P-A.

4. Proposed Note 14 eliminates the requirement currently in Table 3.2.B, Note 1, to place the reactor in "the Cold Shutdown Condition within 24 hours" if the required action or completion time are not met. Proposed Note 14 requires only that the affected system (HPCI or RCIC) be declared inoperable. This change is acceptable because the worst case result of an inoperable channel is that the affected system may not perform its intended function when required. By declaring the affected system inoperable and taking the required actions for that system, the plant is within the bounds of the Technical Specifications associated with Core Standby Cooling System approved actions. Additionally, with the affected system inoperable, the inoperable channel is no longer required to be operable.

5. The HPCI and RCIC initiation channels are also modified by proposed Note 15 that will allow initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required surveillances. Note 15, applied to those instrument functions which actuate CCCS equipment, permits the 6-hour delay in the initiation of required actions only if the associated trip function maintains trip capability.

The proposed changes resulting from the addition of Notes 14 and 15 are justified based on the analyses in NEDC-30936P-A and GENE-770-06-2 and are

consistent with NUREG-1433, Section 3.3.5.1, Conditions A, B and H (for HPCI) and Section 3.3.5.2, Conditions A, B and E (for RCIC).

n. Proposed Notes 15 and 16 to Table 3.2.B: The addition of proposed Notes 15 and 16 to Table 3.2.B is discussed above in Sections 2.3.g through 2.3.m. The addition of these notes is justified by NEDC-30936P-A and GENE-770-06-2 and is consistent with NUREG-1433.

o. Proposed change to Table 4.2.B: The minimum frequency specified for the performance of Instrument Channel Functional Tests is extended from once per month to once every 3 months for the following instruments:

Reactor Water Level;
Drywell Pressure;
Reactor Pressure;
Reactor Pressure (PCIS/LPCI Interlock);
ADS (LPCI and CS Pump discharge Pressure Interlocks);
Trip system Bus Power Monitors;
Core Spray Sparger d/p;
Steam Line High Flow (HPCI and RCIC);
Steam Line High Flow Timers(HPCI and RCIC);
Steam Line High Temperature (HPCI and RCIC);
Safeguards Area High Temperature;
HPCI and RCIC Steam Line Low Pressure; and,
HPCI Suction Source Levels.

These changes to the STI for Instrument Channel Functional Tests are justified by NEDC-30936P-A, NEDC-30851P-A (Supplement 2), NEDC-31677P-A, and RE-020 and the change is consistent with NUREG-1433.

p. Proposed change to Notes for Tables 4.2.A through 4.2.F: Note 1 of the combined Notes for Tables 4.2.A through 4.2.F and References to Note 1 on Table 4.2.B were deleted. Note 1 states that frequency of performance for functional tests is "Initially once every month" but that the frequency could be changed based on failure rate data if the proposed change and supporting failure rate data was reviewed and approved by the NRC. LTRs constitute the review and approval of failure rate data and provide the justification for extending functional test intervals from once per month to once every 3 months. The requirements for extending instrumentation functional test frequency beyond the currently existing interval that Note 1 identifies are satisfied by this TS change proposal; therefore, Note 1 is no longer applicable. Deletion of Note 1 for Tables 4.2.A through 4.2.F and References to Note 1 on Table 4.2.B is an administrative change.

q. The Bases for TS Section 3/4.2.B were revised to reflect the changes discussed above or to correct typographical errors.

2.5 Control Rod Block Actuation (TS 3.2.C)

The changes proposed for PBAPS TS Section 3.2.C, Control Rod Block Actuation, are described below.

a. The proposed change deletes the existing statements of Applicability and the Objective for Section 3.2, Protective Instrumentation (TS 3/4.2), because these statements, as currently written, do not establish any requirements. The proposed change establishes for each separate category of protective instrumentation, concise and complete statements of the LCO and Applicability which are consistent with NUREG-1433. The changes to the LCO requirements for TS Section 3.2.C, Control Rod Block Actuation, are as follows:

   1. The proposed change establishes an explicit statement of the LCO requirements for Control Rod Block instrumentation that is consistent with NUREG-1433.

   2. The proposed LCO 3.2.C clarifies the existing LCO requirement concerning the number of required trip systems by relocating from Table 3.2.C, Note 1, the requirement that there shall be two Operable or tripped trip systems for each control rod block function and including that requirement in the LCO that "there shall be two Operable or tripped trip systems for each function except as noted in Table 3.2.C." In conjunction with this change, proposed Note 15 will be added to Table 3.2.C indicating that there is only one trip system associated with the control rod block actuated by the Scram Discharge Instrument Volume High Level.

   3. The proposed change eliminates the requirement that the cumulative time a Rod Block Monitor (RBM) is inoperable must be less than 24 hours in any 30-day period. This limitation on the amount of time a channel may be inoperable is not in NUREG-0123 and was not an assumption used in NEDC-30851P-A and; therefore, is not needed to ensure RBM system reliability. This change is acceptable because the remaining operable channel is adequate to perform the control rod block function. Additionally, PBAPS Technical Specifications include a requirement (TS Section 3.3.B.5) that requires both RBM channels be operable when operating with a limiting control rod pattern. This additional restriction is being maintained although it is not found in NUREG-0123 and is not an assumption in NEDC-30851P-A (Supplement 1). Therefore, elimination of the cumulative time limit of 24 hours in 30 days will not increase the amount of time that the plant operates with less than the full complement of RBM systems and PBAPS will not operate with a limiting control rod pattern with an inoperable RBM channel.

b. The proposed changes improve the clarity and useability of the Applicability requirements for TS Section 3.2.C, Control Rod Block Actuation, by locating all of the existing applicability requirements in a single location under the appropriate heading. The changes to the applicability requirements are as follows:

   i. The proposed applicability for LCO 3.2.C clarifies the existing LCO requirement for the Rod Block Monitor Function with a specific applicability statement that "The Rod Block Monitor (RBM) shall be Operable with setpoints as required by Table 3.2.C and the Core Operating Limits Report." This change makes the statement of the applicability for the RBM complete by incorporating the requirements in the existing LCO and the requirements in existing Table 3.2.C, Note 11, which states that the values for the Rod Block Monitor high trip setpoint, intermediate trip setpoint, low trip setpoint, and downscale trip setpoint are located in the Core Operating Limits Report (COLR).

   2. The proposed LCO 3.2.C applicability for the Rod Block Monitor Function will be modified by a note that states, "Section 3.3.B.5 is applicable during operation with a limiting control rod pattern." This cross reference is necessary because existing TS Section 3.3.B.5 supersedes the LCO and applicability requirements of TS Section 3.2.C by requiring that both channels (i.e., both trip systems because there is only one channel per trip system for the RBM function) must be operable, "During operation with limiting control rod patterns, as determined by qualified personnel." Therefore, the addition of this Note is necessary to make the LCO and Applicability of TS Section 3.2.C complete.

   3. The proposed applicability for LCO 3.2.C clarifies the existing LCO requirement for the Average Power Range Monitor (APRM), Intermediate Range Monitor (IRM), Source Range Monitor (SRM) and RBM Control Rod Block Functions by locating all of the existing applicability requirements in a single location and under the appropriate heading. The proposed change combines the applicability requirements in the existing LCO 3.2.C.1 and the applicability requirements in

      Table 3.2.C, Note 1, and includes these requirements under the heading "Applicability" for proposed LCO 3.2.C. The applicability requirements in Table 3.2.C, Note 1, are deleted.

   4. The proposed change corrects an error in existing Table 3.2.C, Note 1, that states the APRM rod blocks need not be operable in the Startup Mode. In accordance with existing Table 3.2.C, the APRM Upscale (Startup Mode) function provides a rod block when APRM power is less than 12% and the reactor mode switch is in startup. Therefore, when Note 1 from Table 3.2.C is transferred to the proposed applicability

section of LCO 3.2.C it states: "The APRM and RBM functions are not required to be operable when the Reactor Mode Switch is in Startup except for the APRM Upscale (Startup Mode) which is not required to be operable when the Reactor Mode Switch is in Run." This change is consistent with the current interpretation of the Technical Specifications.

5. The proposed applicability for LCO 3.2.C combines the applicability requirements in the existing LCO 3.2.C.1 and the applicability requirements in Table 3.2.C, Note 9, and includes these requirements under the heading "Applicability" for proposed LCO 3.2.C. The applicability requirements in Table 3.2.C, Note 9, are deleted.

   This change clarifies the existing LCO requirement for the scram discharge instrument volume Control Rod Block (CRB) Functions by locating all of the existing applicability requirements in a single location and under the appropriate heading.

   Each of the changes listed in C.4.b above is an administrative change because there are no technical changes (either actual or interpretational) to the existing PBAPS Technical Specifications. The changes in the location, wording, numbering and formatting of the LCO 3.2.C described above were necessary to support other changes described elsewhere in this section or to improve the clarity or useability of the Technical Specifications.

c. Proposed LCO 3.2.C contains a new heading, "Conditions and Required Actions." This change establishes a common description of the conditions associated with inoperable channels for the instruments in Table 3.2.C and directs completion of required actions in Table 3.2.C, Notes 1, 9 and 10, and proposed Note 12 which is discussed later. The proposed section will state, "With one or more channels required by Table 3.2.C inoperable in one or more Trip Functions, take the Action required by Table 3.2.C." This is an administrative change intended to provide consistency between TS Section 3.2.C and the other TS in Section 3.2.

d. Proposed change to Table 3.2.C, Note 1: The LCO applicability requirements for the SRM, IRM, and APRM control rod block functions are being deleted from Note 1 because these requirements are being relocated to the applicability statement incorporated into LCO 3.2.C. This is an administrative change because there are no technical changes (either actual or interpretational) to the PBAPS Technical Specifications. Note 1 to Table 3.2.C also contains the required actions or completion times for the SRM and RBM (power biased) control rod block functions. The condition description, required actions and completion times for the RBM functions are being relocated to proposed Note 12 and this change is discussed below

in Section 2.4.e. No changes were made to the required actions for the SRM control rod block functions because the AOTs for these functions were not addressed in NEDC-30851P-A (Supplement 1).

e. Proposed Note 12 to Table 3.2.C, (Rod Block Monitor function): The proposed change adds new conditions, required actions, and completion times for the Rod Block Monitor (Power Biased) and Rod Block Monitor Downscale functions. The conditions, required actions and completion times for the RBM functions are located in proposed Note 12. Currently, Table 3.2.C, Note 1, establishes the required actions and completion times for the RBM functions. Note 1 allows an inoperable channel to remain untripped for a period of 7 days provided that the operable system is functionally tested immediately and daily thereafter.

After 7 days, the inoperable RBM channel must be placed in trip. If there is an inoperable channel in both trip systems, then both trip systems must be tripped immediately.

The conditions, required actions, and completion times for the RBM function in Note 1 were modified as necessary to satisfy the assumptions and conditions in NEDC-30851P-A (Supplement 1) which was used to justify extension of AOTs and STIs for the RBM functions. The proposed conditions, required actions and completion times are consistent with NUREG-1433, Section 3.3.2.1, Control Rod Block Instrumentation, Conditions A and B. The changes to the existing requirements are described below:

1. The condition description currently in Table 3.2.C, Note 1, was modified to clarify that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function by changing the wording from "if the first column cannot be met for one of the two trip systems" to "With one or more required Rod Block Monitor channel(s) inoperable." This change is consistent with the statement in NUREG-1433, Section 3.3.2.1, Conditions A and B. This is an administrative change that improves clarity because there is no change to the existing interpretation of the requirements.

2. Proposed Note 12 requires an inoperable RBM channel to be restored to operable within 24 hours (instead of the existing requirement of within 7 days) or placed in trip within the following one hour. This change is consistent with the assumptions and conditions used to justify extension of AOTs and STIs for the RBM functions in NEDC-30851P-A (Supplement 1) and is consistent with NUREG-1433, Section 3.3.2.1, Conditions A and B.

3. Proposed Note 12 does not require that the operable RBM channels be functionally tested immediately and daily thereafter. This change acknowledges that the inoperability of a subsystem is not

automatically indicative of a similar condition in the redundant subsystem unless a generic failure is suspected. This change is justified because it: allows credit to be taken for normal periodic surveillances as a sufficient demonstration of operability; recognizes that functional capability is maintained by the remaining components and the reduction in redundancy will be of limited duration; reduces unnecessary challenges and wear to redundant components; and, incorporates operating experience and analysis (NEDC-30851P-A (Supplement 1)) that have demonstrated the normal STI is sufficient to provide a very high degree of reliability of an instrument channel. This change is consistent with the assumptions and conditions used to justify extension of AOTs and STIs for the RBM functions in NEDC-30851P-A (Supplement 1) and is implemented consistent with NUREG-1433, Section 3.3.2.1, Conditions A and B.

4. Proposed Note 12 requires that "With 2 RBM channels inoperable, place one RBM channel in trip within 1 hour." Placing either of the two channels in trip actuates a control rod block and satisfies the safety function of this instrument. This proposed change was added to prevent an extended loss of function since a loss of function was not considered in NEDC-30851P-A (Supplement 1). This is consistent with the existing requirement in Table 3.2.C, Note 1, i.e., if there is an inoperable channel in both trip systems, then both trip systems must be tripped immediately. This change is administrative and is consistent with NUREG-1433, Section 3.3.2.1, Condition B.

f. Addition of proposed Table 3.2.C, Note 13: As discussed above in Section 2.4.b.2, existing LCO 3.3.B.5 does not allow operation with an inoperable RBM channel during operation with a limiting control rod pattern. Proposed Note 13 provides a cross reference from Table 3.2.C to existing LCO 3.3.B.5. This cross reference is necessary because existing TS Section 3.3.B.5 supersedes the LCO and applicability requirements of TS Section 3.2.C by requiring that both channels (i.e., both trip systems because there is only one channel per trip system for the RBM function) must be operable, "During operation with limiting control rod patterns, as determined by qualified personnel." This is an administrative change because there are no technical changes (either actual or interpretational) to the Technical Specifications.

g. Addition of proposed Table 3.2.C, Note 14: A new note was added to provide clarification concerning implementation of required actions. The note will allow initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required surveillances, provided the associated trip function maintains control rod block capability. This note is applicable to the APRM and RBM rod block functions and is justified based on the analysis in NEDC-30851P-A (Supplement 1) and, for the RBM function, is consistent with NUREG-1433. The APRM rod block functions are not included in NUREG-1433.

h. Addition of proposed Table 3.2.C, Note 15: Proposed Note 15 will be added to Table 3.2.C indicating that there is only one trip system associated with the control rod block actuated by the Scram Discharge Instrument Volume High Level. This change is necessary because proposed LCO 3.2.C states " there shall be two Operable or tripped trip systems for each Trip Function except as noted in Table 3.2.C." This is an administrative change because there are no changes to the existing TS requirements.

i. Proposed change to Table 4.2.C: The minimum frequency specified for the performance of Instrument Channel Functional Tests is extended from once per month to once every 3 months for the following control rod block instruments: APRM - Downscale; APRM - Upscale; RBM - Downscale; and,

   RBM - Upscale. These changes to the STI for Instrument Channel Functional Tests are justified by NEDC-30851P-A (Supplement 1) and the change is consistent with NUREG-1433.

j. Proposed change to Notes for Tables 4.2.A through 4.2.F: Note 1 of the combined Notes for Tables 4.2.A through 4.2.F and References to Note 1 on Table 4.2.C were deleted. Note 1 states that frequency of performance for functional tests is "Initially once every month" but that the frequency could be changed based on failure rate data if the proposed change and supporting failure rate data was reviewed and approved by the NRC. LTRs constitute the review and approval of failure rate data and provide the justification for extending functional test intervals from once per month to once every 3 months. The requirements for extending instrumentation functional test frequency beyond the currently existing interval that Note 1 identifies are satisfied by this TS change proposal; therefore, Note 1 is no longer applicable. Deletion of Note 1 for Tables 4.2.A through 4.2.F and References to Note 1 on Table 4.2.A is an administrative change.

k. The Bases for TS Section 3/4.2.C were revised to reflect the changes discussed above or to correct typographical errors.

2.6 <u>Radiation Monitoring Systems (TS 3.2.D)</u>

The changes proposed for PBAPS TS Section 3.2.D, Radiation Monitoring Systems, are described below.

a. The proposed change deletes the existing statements of Applicability and the Objective for Section 3.2, Protective Instrumentation (TS 3/4.2), because these statements, as currently written, do not establish any requirements. The proposed change establishes for each separate category of protective instrumentation, concise and complete statements of the LCO and Applicability which are consistent with NUREG-1433. For TS Section 3.2.D, Radiation Monitoring Systems, the proposed change creates separate statements for the LCO and Applicability as follows:

1. The proposed LCO 3.2.D establishes, under an appropriate heading, an applicability requirement for LCO 3.2.D by relocating, from Table 3.2.D, Notes 1 and 3, existing requirements that: Refuel Area Exhaust Monitors and Reactor Building Area Exhaust Monitors shall be operable whenever the associated systems are required to be operable; and, the Main Stack Monitor shall be Operable whenever the containment is purging and primary containment integrity is required.

2. The proposed LCO 3.2.D clarifies the existing LCO requirement concerning the number of required trip systems by adding the statement that there shall be two operable or tripped trip systems for each function listed in Table 3.2.D.

   Each of the changes listed above is an administrative change because there are no technical changes (either actual or interpretational) to the Technical Specifications. These changes improve clarity and/or establish the numbering and format necessary to support technical changes discussed elsewhere. These changes are consistent with NUREG-1433.

b. Proposed LCO 3.2.D contains a new heading, "Conditions and Required Actions." The conditions and required actions for inoperable channels, currently in Table 3.2.D, Notes 1 and 3, were incorporated into the Specification as 3.2.D. The conditions, required actions, and completion times were modified as described below in paragraphs 2.5.c through 2.5.f to satisfy the assumptions and conditions in NEDC-31677P-A which were used to justify extension of AOTs and STIs for Radiation Monitoring Instrumentation that actuate containment isolation. The proposed conditions, required actions, and completion times are consistent with NUREG-1433, as follows: Sections 3.3.6.1, Primary Containment Isolation Instrumentation, Conditions A, B, C and F for the Main Stack Monitor; and, Sections 3.3.6.2, Secondary Containment Isolation Instrumentation, Conditions A, B and C for the Refuel Area Exhaust Monitors and Reactor Building Exhaust Monitors.

c. Proposed LCO 3.2.D, Condition 1: The condition and required action currently in Table 3.2.D, Note 1, "the specified number of instrument channels shall be operable or placed in the tripped condition" was relocated to Condition 1 and modified as follows:

   1. The proposed condition description clarifies that the condition could be simultaneously applied to more than one trip function and more than one trip system within a trip function by changing the wording to "With one or more channel(s) required by Table 3.2.D inoperable in one or more Trip Functions." This change is consistent with NUREG-1433, Section 3.3.6.1.A, and the associated note allowing separate condition entry.

2. The repair AOT for an inoperable channel currently in Table 3.2.D, Note 1, was extended from immediately (interpreted as within one hour) to within 24 hours. The AOTs specified for each primary containment isolation instrument function are based on the analyses in NEDC-30851P-A (Supplement 2) and NEDC-30677P-A. The condition description, required actions and completion times are consistent with NUREG-1433.

   Proposed Condition 1 and the associated required action and completion times are consistent with NUREG-1433, Sections 3.3.6.1 and 3.3.6.2, Primary and Secondary Containment Isolation Instrumentation, Condition A.

d. Proposed LCO 3.2.D, Condition 2: A new condition, "With one or more automatic functions with containment isolation capability not maintained" was established. This condition will have Required Actions that will restore containment isolation capability within one hour. This new condition and required action is necessary because the analyses in NEDC-31677P-A did not consider that extending the AOT could result in an extended loss of trip capability and NEDC-31677P-A was used to justify extending AOTs (proposed LCO 3.2.D, Condition 1) for an inoperable channel. Proposed condition 1 and the associated required action and completion time are consistent with NUREG-1433, Sections 3.3.6.1 and 3.3.6.2, Primary and Secondary Containment Isolation Instrumentation, Condition B.

e. Proposed LCO 3.2.D, Condition 3: This change clarifies and incorporates into the LCO the requirement currently located in Table 3.2.D, Note 2, that specific actions be performed whenever the required actions and completion times of proposed Conditions 1 or 2 cannot be met. The required actions specified by proposed Condition 3 are still located in Table 3.2.A (Note 2, Actions A, B, and C) and were not modified. The required actions and completion times in proposed Condition 3 and Table 3.2.D, Note 2, are consistent with NUREG-1433, Sections 3.3.6.1 and 3.3.6.2, Primary and Secondary Containment Isolation Instrumentation, Condition C.

f. Proposed LCO 3.2.D, Conditions and Required Actions: Two new notes were added to provide clarification concerning implementation of required actions. The first note will allow initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required surveillances, provided the associated trip function maintains isolation capability. The second note provides clarification that 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 3.2.D for that trip function shall be taken. Both notes are justified based on NEDC-31677P-A and are consistent with NUREG-1433.

g. Proposed change to Table 3.2.D, Notes 1, 2, 3 and 4: As discussed in Sections 2.6.a and 2.6.b, the proposed LCO 3.2.D contains applicability requirements and required actions that were relocated from Table 3.2.D, Note 1. Existing Notes 1 and 3, and references to existing Notes 1 and 3 on Table 3.2.D are deleted. Existing Table 3.2.D, Note 2 Action, and the Reference to Note 2 in Table 3.2.D will be renumbered as Note 1.

   Existing Note 4 and the reference to Note 4 in Table 3.2.D will be renumbered as Note 2. These are administrative changes for existing requirements to be relocated.

h. Proposed change to Table 4.2.D: The minimum frequency specified for the performance of Instrument Channel Functional Tests is extended from once per month to once every 3 months for the Refuel Area Exhaust Monitors and Reactor Building Area Monitors. These changes to the STI for Instrument Channel Functional Tests is justified by NEDC-31677P-A and the change is consistent with NUREG-1433.

i. Proposed change to Specification 3/4.2.D.2: The proposed change to Section 3.2, Protective Instrumentation, requires that TS Section 3/4.2.D.2, Main Control Room, be moved from existing page 59 to a new page numbered 59a. The numbering of Notes associated with TS Section 3/4.2.D.2 on Table 3.2.D were changed to support other changes on Table 3.2.D which are described above. Each of the changes is an administrative change.

j. The Bases for TS Section 3/4.2.D were revised to reflect the changes discussed above or to correct typographical errors.

2.7 <u>Leak Detection (TS 3.2.E)</u>

The changes proposed for PBAPS TS Section 3.2.E, Drywell Leak Detection, are described below.

a. The proposed change deletes the existing statements of Applicability and the Objective for Section 3.2, Protective Instrumentation (TS 3/4.2), because these statements, as currently written, do not establish any requirements. For TS Section 3.2.E, no changes were made to the existing requirements.

b. The proposed change to Section 3.2, Protective Instrumentation, requires that TS Sections 3.2.E and 4.2.E, Drywell Leak Detection, be moved to a new page numbered 59a.

c. Table 4.2.E was modified to delete the references to Note 1 but the Channel Functional Test frequency was maintained as once per month consistent with current requirements.

Each of the changes above is an administrative change.

2.8 Surveillance Information Readouts (TS 3.2.F)

The changes proposed for PBAPS TS Section 3.2.F, Surveillance Information Readouts, are described below.

a. The proposed change deletes the existing statements of Applicability and the Objective for Section 3.2, Protective Instrumentation (TS 3/4.2), because these statements, as currently written, do not establish any requirements. For TS Section 3.2.F, no changes were made to the existing requirements.

b. The proposed change to Section 3.2, Protective Instrumentation, requires that TS Sections 3.2.F and 4.2.F, Surveillance Information Readouts, be moved to a new page numbered 59a.

Each of the changes above is an administrative change.

2.9 Alternate Rod Insertion (ARI) and Recirculation Pump Trip (RPT) (TS 3.2.G)

The changes proposed for PBAPS TS Section 3.2.G, Alternate Rod Insertion and Recirculation Pump Trip, are described below.

a. The proposed change deletes the existing statements of Applicability and Objective for Section 3.2, Protective Instrumentation (TS 3/4.2), because these statements, as currently written, do not establish any requirements. The proposed change establishes for each separate category of protective instrumentation, concise and complete statements of the LCO and Applicability which are consistent with NUREG-1433. For TS Section 3.2.G, the LCO and Applicability were established as follows:

   1. The proposed LCO 3.2.G retains, under an appropriate heading, the existing applicability requirement that ARI and RPT shall be operable "when the Reactor Mode Switch is in the Startup or Run positions."

   2. The proposed LCO 3.2.G retains the existing LCO requirement that two trip systems, including the manual and automatic actuation logic and actuation devices of both trip systems, must be operable.

   Each of the changes above is an administrative change and is consistent with NUREG-1433.

b. Proposed change to Table 3.2.G: Proposed LCO 3.2.G and proposed changes to Table 3.2.G will increase the minimum number of operable channels per trip system from one channel per trip system to two channels per trip system for both the reactor high pressure function and the reactor low-low water level function. This change is required to satisfy the assumptions used in GENE-770-06-1 which justified the ARI and RPT AOTs and STIs by assuming no loss of trip capability during the period that an inoperable channel is not in trip.

GENE-770-06-1 evaluated two different Anticipated Transient Without Scram (ATWS)/RPT logic designs: one out-of-two taken twice for each ATWS function (reactor high pressure and reactor low-low water level); and, two out-of-two taken twice for each ATWS function. The PBAPS ATWS/RPT logic, approved by the NRC in Amendment 141 dated March 22, 1989, uses a one out-of-four taken twice logic with the four channels consisting of two channels of the high reactor pressure function and two channels of the reactor low-low water level function. Existing Table 3.2.G requires only one of the two channels of each function to be operable in each trip system. In order for the generic analysis in GENE-770-06-1 to envelope the PBAPS design without additional analysis, the licensee proposed a change to the PBAPS Technical Specifications to require both channels of each function (level and pressure) to be operable in both trip systems. This change will make the PBAPS design consistent with and more conservative than the one out-of-two taken twice design analyzed in GENE-770-06-1 and the change is more conservative than the existing requirements. This change is consistent with NUREG-1433.

c. Proposed LCO 3.2.G contains a new heading, "Conditions and Required Actions." The conditions and required actions for inoperable channels, currently in Table 3.2.G, Notes 1, 2, 3 and 4, were deleted and replaced with conditions and required actions consistent with NUREG-1433, LCO 3.3.4.2, ATWS-RPT instrumentation. The proposed conditions, required actions and completion times adopt the AOTs from NUREG-0123, and add the extended AOTs justified in GENE-770-06-1. This combination of changes is consistent with NUREG-1433 and satisfies the assumptions used in the justification of extensions of AOTs and STIs for instrumentation that provide ATWS-RPT functions. The proposed conditions, required actions, and completion times are more conservative than the existing requirements because: the change eliminates Table 3.4.G, Notes 3 and 4, which allow operation to continue for 48 hours (plus an additional 8 hours to reach the Shutdown or Refuel Mode) with a complete loss of one or both ATWS-RPT functions; and, eliminates current requirements that allow operation to continue indefinitely with a loss of single failure capability.

TS Section 3.2.G includes an ATWS/Alternate Rod Insertion (ATWS/ARI) function that is not included in NUREG-0123 and, therefore, was not evaluated in GENE-770-06-1 or included in NUREG-1433. The licensee's evaluation of GENE-770-06-1 determined that the justification for AOT and STI extensions for ATWS/RPT is applicable to ATWS/ARI because this function uses the same instruments and logic used for the ATWS/RPT function. The only difference between the two functions is the device being actuated and the actuated device is not included in the generic analysis in GENE-770-06-1. Therefore, proposed changes to ATWS-RPT which are being made consistent with NUREG-1433 and GENE-770-06-1 are also being applied to the ATWS/ARI function. This change is conservative because the proposed changes, discussed below, require the operability of an additional channel per trip system and do not permit an extended loss of function as is allowed in the existing TS.

d. Proposed LCO 3.2.G, Condition 1: Proposed Condition 1 specifies that "With one or more channels required by Table 3.2.G inoperable, restore the channel to Operable status or place the channel in trip within 14 days." This change, when taken in conjunction with the proposed change that requires two operable channels per function (pressure and level) per trip system, will limit the amount of time the ARI/RPT system can be considered operable without being single failure proof for each function to a maximum of 14 days. Existing Table 3.2.G, by requiring only one operable channel per function per trip system, does not require any allowance for single failure within a function. Therefore, this change is more conservative. Proposed Condition 1 and the associated required action and completion time satisfy the assumptions used to demonstrate system reliability in GENE-770-06-1 and are consistent with NUREG-1433, Section 3.3.4.2, (ATWS-RPT), Condition A. This change is applicable to both the RPT and ARI functions.

e. Proposed LCO 3.2.G, Condition 2: Proposed Condition 2 specifies that "With one instrument function with trip capability not maintained, restore trip capability within 72 hours." This change, when taken in conjunction with the proposed change that requires two operable channels per function (pressure and level) per trip system, will limit the amount of time the ARI/RPT system can be considered operable with the ability to trip on only one function (level or pressure) to 72 hours. Existing Table 3.2.G, Notes 1, 2 and 3, allow a similar condition to exist for only 48 hours before reactor shutdown is required. However, proposed Condition 2 and the associated required action and completion time satisfy the assumptions used to demonstrate system reliability in GENE-770-06-1 and are consistent with NUREG-1433, Section 3.3.4.2, (ATWS-RPT), Condition B. This change is applicable to both the RPT and ARI functions.

f. Proposed LCO 3.2.G, Condition 3: Proposed Condition 3 specifies that "With both instrument functions or an actuation device with trip capability not maintained, restore trip capability for one function within 1 hour." This change, in conjunction with proposed Condition 4, requires the initiation of a reactor shutdown within 1 hour of the discovery of a loss of ARI/RPT function. The existing requirements (Table 3.2.G, Notes 3 and 4) allow operation to continue for 48 hours (plus an additional 8 hours to reach the Shutdown or Refuel Mode) with a complete loss of one or both ATWS-RPT functions. Proposed Condition 3 and the associated required action and completion time satisfy the assumptions used to demonstrate system reliability in GENE-770-06-1 and are consistent with NUREG-1433, Section 3.3.4.2, (ATWS-RPT), Condition C. This change is applicable to both the RPT and ARI functions.

g. Proposed LCO 3.2.G, Condition 4: Proposed Condition 4 specifies that "If the required actions and associated completion times of Action 1, 2 or 3 are not met, place the reactor in shutdown or refuel mode within 8 hours." Proposed Condition 4 is consistent with the existing requirement in

Table 3.2.G, Note 4. The proposed change is similar to NUREG-1433, Section 3.3.4.2, (ATWS-RPT), Condition D, because both require that the reactor be placed outside the applicable mode within a short period of time. In NUREG-1433, this is satisfied by being in Mode 2 within 6 hours; in the proposed change, this is satisfied by being in shutdown or refuel mode within 8 hours. Proposed Condition 4 and the associated required action and completion time satisfy the assumptions used to demonstrate system reliability in GENE-770-06-1.

h. Proposed LCO 3.2.G, Conditions and Required Actions: Three new notes were added to provide clarification concerning implementation of required actions. The first note will allow initiation of required actions to be delayed for up to 6 hours when a channel is placed in an inoperable status solely for performance of required surveillances, provided the associated trip function maintains ARI/RPT trip capability. The second note provides clarification that 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 LCO 3.2.G, Condition 4, shall be taken. The third note specifies that placing an inoperable instrument channel in trip is not applicable if the inoperable channel is the result of an inoperable breaker. These notes are justified based on GENE-770-06-1 and are consistent with NUREG-1433.

i. Proposed change to Table 4.2.G: The minimum frequency specified for the performance of Instrument Channel Functional Tests is extended from once per month to once every 3 months for the Reactor High Pressure and Reactor Low-Low Water Level functions. As noted on Table 4.2.D, these instrument channels are the same ones used by the Core and Containment Cooling Systems. These changes to the STI for Instrument Channel Functional Tests are justified by GENE-770-06-1 and the change is consistent with NUREG-1433.

j. The Bases for TS Section 3/4.2.G were revised to reflect the changes discussed above or to correct typographical errors.

2.10 Justification For The Proposed Changes

PECO Energy has determined that the generic analyses performed by GE for the BWR Owners' Group for revised AOTs and STIs for the testing and/or repair of instrumentation that actuates RPS, Primary Containment Isolation, Core and Containment Cooling systems, Control Rod Blocks Radiation Monitoring systems, and Alternate Rod Insertion/Recirculation Pump Trip are applicable to the Peach Bottom, Units 2 and 3. PECO Energy has completed plant-specific evaluations required by the NRC SERs which approved the LTRs for use by individual facilities. As stated in the SERs, three issues must be addressed to apply the RPS LTR (NEDC-30851P-A) and two issues must be addressed to apply the other LTRs to an individual facility when plant-specific TSs are

considered for revision. These issues, the licensee's treatment and the staff's evaluation of them are as follows:

a. Confirm the applicability of the generic analyses to the specific facility.

1. The generic study in NEDC-30851P-A provides a technical basis to modify the SITs and AOTs of the RPS. The generic study also provides additional analyses of different RPS configurations to support the application of the generic analysis on a plant-specific basis. A plant-specific evaluation for modifying the STIs and AOTs of the RPS in the technical specifications of Peach Bottom, Units 2 and 3, has been performed by GE and is contained in the plant-specific evaluation report MDE-87-0485-1, Technical Specification Improvement Analysis for the Reactor Protection System for Peach Bottom, Units 2 and 3. The evaluation utilized the generic analysis and additional analyses documented in NEDC-30851P-A. The results indicated that the RPS configuration for Peach Bottom, Units 2 and 3, has several differences compared to the RPS configuration in the generic evaluation. The NRC staff has reviewed NEDC-30851P-A and MDE-87-0485-1 and verified that the generic analysis is applicable to Peach Bottom, Units 2 and 3. The differences between the RPS at Peach Bottom, Units 2 and 3, and the generic plant analyzed in NEDC-30851P-A are discussed in item c. below.

2. GE Report NEDC-30936P-A provides an acceptable generic basis for supporting plant-specific Technical Specification changes that extend ECCS STIs and AOTs for test and repair. The plant-specific evaluation contained in GE Report RE-020, Technical Specification Improvement Analysis for the Emergency Core Cooling System Actuation Instrumentation for Peach Bottom Atomic Power Station, Units 2 and 3, followed the procedures of NEDC-30936P-A to identify and evaluate the differences between the Peach Bottom, Units 2 and 3, ECCS configuration and the ECCS configuration used in the generic analysis. The results of the staff's review indicate that while the ECCS configuration for Peach Bottom, Units 2 and 3, is slightly different than the generic configuration assumed, these differences do not affect the applicability of the TS changes developed based on the generic analysis. Therefore, the generic analysis in NEDC-30936P-A is applicable to Peach Bottom, Units 2 and 3.

3. NEDC-30851P-A, Supplement 2, identifies PECO Energy as a participant in the BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation evaluation. The staff reviewed the licensee's evaluation and verified that the generic analysis is applicable to Peach Bottom, Units 2 and 3.

4. NEDC-31677P-A, Appendix E identifies PECO Energy as a participant in the BWR Isolation Actuation Instrumentation evaluation. The staff

reviewed the licensee's evaluation and verified that the generic analysis is applicable to Peach Bottom, Units 2 and 3.

5. NEDC-30851P-A, Supplement 1, Appendix B identifies PECO Energy as a participant in the BWR Control Rod Block Instrumentation evaluation. The staff reviewed the licensee's evaluation and verified that the generic analysis is applicable to Peach Bottom, Units 2 and 3.

6. GENE-770-06-1 identifies the application of changes to STIs and AOTs for Selected Instrumentation Technical Specifications to all BWR plants. The staff reviewed the licensee's evaluation and verified that this LTR is applicable to Peach Bottom, Units 2 and 3, only to the limited extent that it identified AOTs for Control Rod Block Instrumentation which NEDC-30851P-A, Supplement 1 did not explicitly address.

b. Demonstrate, by use of current drift information provided by the equipment vendor or plant-specific data, that the drift characteristics for instrumentation used in RPS, ECCS, Isolation and Rod Block instrument channels in the plant are bounded by the assumptions used in the LTRs when the functional test interval is extended from weekly or monthly to quarterly.

The staff's generic SER of May 27, 1987 on GE NEDC-30844 and NEDC-30851P states the staff's position for confirmation of instrument setpoint drift allowance. By a letter to the BWR Owners' Group from C. Rossi (NRC) dated April 27, 1988, the NRC requested licensees to confirm that the setpoint drift which could be expected under the extended STIs has been studied and either: (1) has been shown to remain within the existing allowance in the RPS and ESFAS instrument setpoint calculation, or (2) that the allowance and setpoint have been adjusted to account for the additional expected drift. No additional information need to be provided for staff review. However, records showing the actual setpoint calculation and supporting data should be retained onsite for possible future staff audit. In its submittal, the licensee has demonstrated that drift data of the affected instrumentation remained within the existing allowance in the RPS and ESFAS instrument setpoint calculation when considered over the extended period.

c. Confirm that the differences between the parts of the RPS that perform the trip functions in the plant and those of the base case plant were included in the plant-specific analysis done using the procedures of Appendix K of NEDC-30851P or present plant-specific analyses to demonstrate no appreciable change in RPS availability or Public risk.

GE Report MDE-87-0485-1, "Technical Specification Improvement Analysis for the Reactor Protection System for Peach Bottom Atomic Power Station, Units 2 and 3," provides a plant-specific evaluation to determine whether the

generic study contained in NEDC-30851P-A is applicable to Peach Bottom, Units 2 and 3, to review STIs and add AOTs in TSs for the RPS instrumentation. This report utilizes the procedures in Appendix K of NEDC-30851P-A to identify and evaluate the differences between the parts of the RPS that perform the trip functions at Peach Bottom, Units 2 and 3, and those analyzed in the generic study. PECO Energy performed an evaluation of NEDC-30851P-A and MDE-87-0485-1 to verify that the generic analysis is applicable to Peach Bottom, Units 2 and 3, and concluded that it remains applicable with differences as discussed above in Section 2.1. The differences between the RPS at Peach Bottom, Units 2 and 3, and the generic model are bounded by the analysis contained in NEDC-30851P-A. As discussed above, the staff finds that the generic analysis for RPS operability remains applicable to Peach Bottom, Units 2 and 3.

2.11 Summary

The staff has reviewed the proposed PBAPS TS changes to extend STIs and AOTs for instrumentation associated with the RPS, Primary Containment Isolation, Core and Containment Cooling Systems, Control Rod Blocks, Radiation Monitoring Systems, and Alternate Rod Insertion/Recirculation Pump Trip. The changes have been the subject of generic LTRs which the NRC has previously reviewed and approved. PECO Energy has addressed the implementation of the generic Technical Specification changes identified in the LTRs and incorporated into NURG-1433 on a plant-specific basis. The licensee performed the required plant-specific analysis and justified the application of the generic analysis to the Peach Bottom, Units 2 and 3, plant-specific design. The information for setpoint drift supports the conclusion that instrument drift is not a concern in extending the functional test interval from monthly to quarterly. The proposed changes also include editorial and administrative changes which ensure consistent use of nomenclature, correct typographical errors, reformat the instrumentation tables, and delete notes which are no longer applicable.

Based on the review of the proposed PBAPS TS changes, the staff concludes that the changes are consistent with the previously approved generic analyses and appropriate plant-specific evaluations have been performed. The staff, therefore, concludes that the proposed instrumentation TS changes are consistent with NUREG-1433 and, are therefore, acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania 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 installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes 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 14027). 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: S. Rhow

Date: June 6, 1995