3/4.3 INSTRUMENTATION

provided for completeness

PY-CENRR-1496 L Page 1 of SQ

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the reactor protection system instrumentation channels shown in Table 3.3.1-1 shall be OPERABLE with the REACTOR PROTECTION SYSTEM RESPONSE TIME as shown in Table 3.3.1-2. No changes per this supplement;

APPLICABILITY: As shown in Table 3.3.1-1.

ACTION:

INSERT 1)

- a. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system, place the inoperable channel(s) and/or that trip system in the tripped condition* within 1 hour. The provisions of Specification 3.0.4 are not applicable.
- b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems, place at least one trip system** in the tripped condition within one hour and take the ACTION required by Table 3.3.1-1.

SURVEILLANCE REQUIREMENTS

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

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

4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME of each reactor trip functional unit shown in Table 3.3.1-2 shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one channel per trip system such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip system.

4.3.1.4 The provisions of Specification 4.0.4 are not applicable to the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION surveillances for the Intermediate Range Monitors for entry into their applicable OPERATIONAL CONDITIONS (as shown in Table 4.3.1.1-1) from OPERATIONAL CONDITION 1, provided the surveillances are performed within 12 hours after such entry.

- *An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, the inoperable channel shall be restored to OPERABLE status within 2 hours or the ACTION required by Table 3.3.1-1 for that Trip Function shall be taken.
- **The trip system need not be placed in the tripped condition if this would cause the Trip Function to occur. When a trip system can be placed in the tripped condition without causing the Trip Function to occur, place the trip system with the most inoperable channels in the tripped condition; if both systems have the same number of inoperable channels, place either trip system in the tripped condition.

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Amendment No. 41

PY-CEI/NRR-1694 Attachment 2 Page 2 of 54 Page 2 of 54

are in the tripped condition

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- a. With one channel required by Table 3.3.1-1 inoperable in one or more Functional Units, place the inoperable channel and/or that trip system in the tripped condition* within 12 hours.
- b. With two or more channels required by Table 3.3.1-1 inoperable in one or more Functional Units;
 - Within one hour, verify sufficient channels remain OPERABLE or tripped to maintain trip capability in the Functional Unit, and
 - Within 6 hours, place the inoperable channel(s) in one trip system and/or that trip system** in the tripped condition*, and
 - Within 12 hours, restore the inoperable channels in the other trip system to an OPERABLE status or tripped.

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

INSERT 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 3.3.1-1 for the Functional Unit shall be taken.

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



2.

INSERT 1:

	PY-CEI/NRR-1694 Attachment 2 Fage 3 of 54 PY-CEX-NRR-1496 L Bage 3 of 50
	TABLE 3.3.1-1 (Continued)
	REACTOR PROTECTION SYSTEM INSTRUMENTATION (REPLACE) STAIS
	TABLE NOTATIONS (INSERT (Supplement)
(0)	A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the trip system in the tripped condition provided at least one OPERABLE channel in the same trip system is monitoring that parameter.
(b)	Unless adequate shutdown margin has been demonstrated per Specifica- tion 3.1.1 and the "one-rod-out" Refuel position interlock has been demonstrated OPERABLE per Specification 3.9.1, the shorting links shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn.*
(c)	An APRM channel is inoperable if there are less than 2 LPRM inputs per level or less than 14 LPRM inputs to an APRM channel.
(d)	This function is not required to be OPERABLE when the reactor pressure vessel head is removed per Specification 3.10.1.
(e)	This function shall be automatically bypassed when the reactor mode switch is not in the Run position.
(f)	This function is not required to be OPERABLE when DRYWELL INTEGRITY is not required.
(g)	With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.
(h)	This function is automatically bypassed when turbine first stage pressure is less than the value of turbine first stage pressure corresponding to 40%** of RATED THERMAL POWER.
A1 fo	t required for control rods removed per Specification 3.9.10.1 or 3.9.10.2. e Turbine First stage Pressure Bypass Setpoints and corresponding lowable Values are adjusted based on Feedwater temperatures (see 3/4.2.2 r definition of AT). The Setpoints and Allowable Values for various ATs e as follows:

<u>T(°F)</u>	Setpoint (psig)	Allowable Value (psig)
0 = T 0 < ΔT <u>< 50</u> 50 < ΔT <u>< 100</u> 100 < ΔT <u><</u> 170	<pre>< 212 < 190 < 168 < 146</pre>	< 218 < 196 < 174 < 152

PERRY - UNIT 1

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3/4 3-5 Amendment No. 29

PY-CEI/NRR-1694 L Attachment 2 Page 4 of 54

Insert for page 3/4 3-5:

(a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed for up to 6 hours provided the associated Functional Unit maintains RPS trip capability.

PY-CEI/NRR-1694 Autachment 2 PY-CELERR-1496 L Attachment 2 Page 6 of 50 Page 5 of 54

INSTRUMENTATION

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The isolation actuation instrumentation channels shown in Table 3.3.2-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2 and with ISOLATION SYSTEM RESPONSE TIME as shown in Table 3.3.2-3.

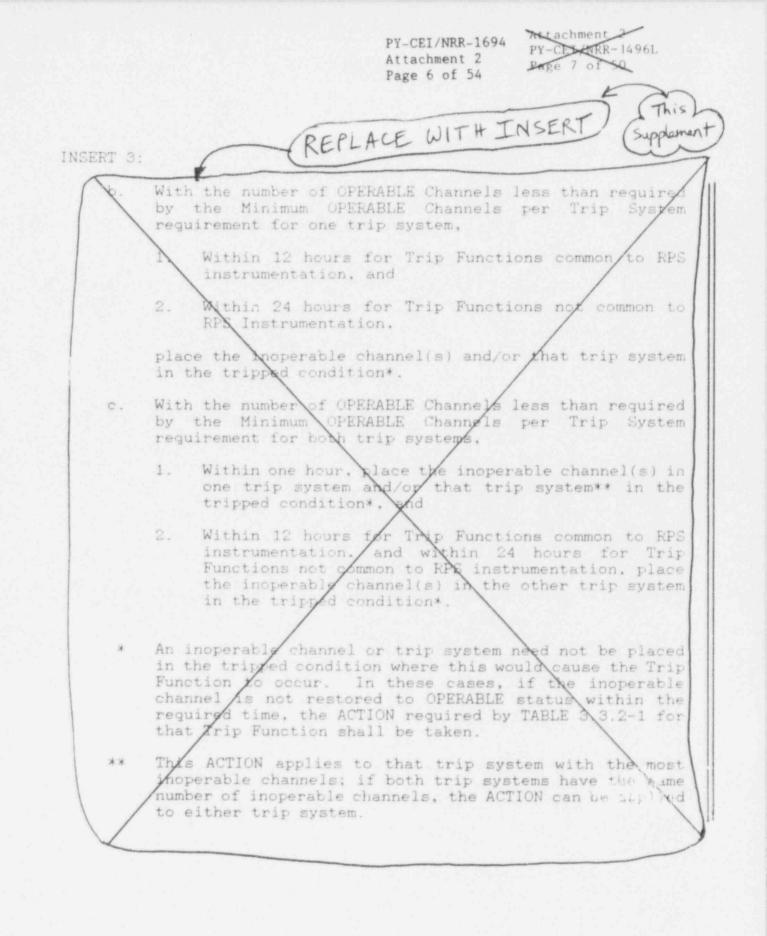
APPLICABILITY: As shown in Table 3.3.2-1. (No changes per this supplement; ACTION:

Insert 3

- With an isolation actuation instrumentation channel trip setpoint a. less conservative than the value shown in the Allowable Values column of Table 3.3.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.
- b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system, place the inoperable channel(s) and/or that trip system in the tripped condition* within one hour. The provisions of Specification 3.0.4 are not applicable.
- With the number of QPERABLE channels less than required by the Minimum С. OPERABLE Channels per Jrip System requirement for both trip systems, place at least one trip system** in the tripped condition within one hour and take the ACTION required by Table 3.3.2-1.

*An inoperable channel need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, the inoperable channel shall be restored to OPERABLE status within 2 hours or the ACTION required by Table 3.3.2-1 for that Trip Function shall be taken.

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



PY-CEI/NRR-1694 L Attachment 2 Page 7 of 54

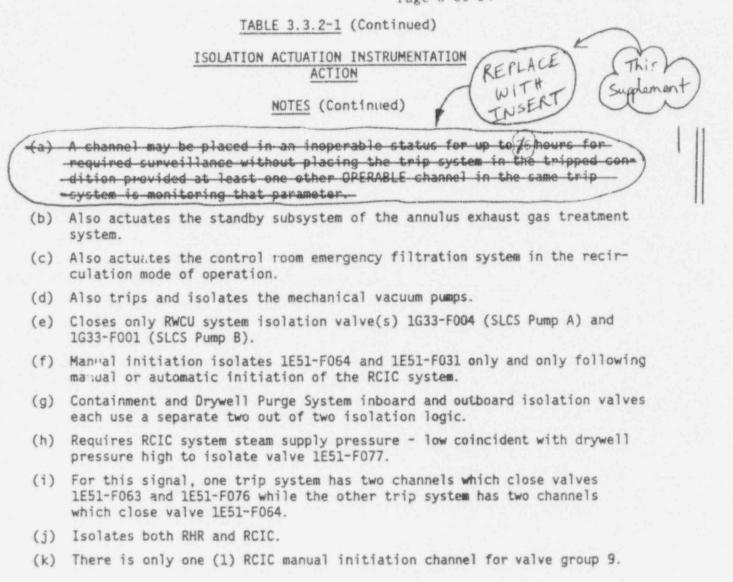
Insert for page 3/4 3-9:

- b. With one channel required by Table 3.3.2-1 inoperable in one or more Trip Functions, place the inoperable channel and/or that trip system in the tripped condition* within:
 - 1. 12 hours for Trip Functions common to RPS instrumentation, and
 - 2. 24 hours for Trip Functions not common to RPS instrumentation.
- c. With two or more channels required by Table 3.3.2-1 inoperable in one or more Trip Functions;
 - Within one hour, verify for automatic trip functions that sufficient channels remain OPERABLE or are in the tripped condition* to maintain isolation capability for the Trip Function, and
 - Within 12 hours for Trip Functions common to RPS instrumentation, and within 24 hours for Trip Functions not common to RPS instrumentation, place the inoperable channel(s) in the tripped condition*.

Otherwise, take the ACTION required by Table 3.3.2-1 for the Trip Function.

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

PY-CEI/NRR-1694 Attachment 2 Page 8 of 54 PY-CESCORR-1-10 L Page 8 of 50



PY-CEI/NRR-1694 L Attachment 2 Fage 9 of 54

Insert for page 3/4 3-16:

(a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed as follows: (a) for up to 6 hours for Trip Functions 1.h and 5.m; and (b) for up to 6 hours for Trip Functions other than 1.h and 5.m provided the associated Trip Function maintains isolation capability.

TABLE 3.3.3-1

EM'. RGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TRIP	FUNC	CTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION(a)	APPLICABLE OPERATIONAL CONDITIONS	ACTION
Α.	<u>DIV</u> 1.	ISION 1 TRIP SYSTEM RHR-A (LPCI MODE) AND LPCS SYSTEM a. Reactor Vessel Water Level - Low, Level 1 b. Drywell Pressure - High c. LPCS Pump Discharge Flow - Low (Bypass)	2(b) 2(b) 1	1, 2, 3, 4*, 5* 1, 2, 3 1, 2, 3, 4*, 5* 1, 2, 3	30 30 39 31 7 2 2 7
		 c. LPCS rump Discharge from - Low (LPCS Injection Valve Permissive) e. Reactor Vessel Pressure - Low (LPCI Injection Valve Permissive) f. LPCI Pump A Start Time Delay Relay g. LPCI Pump A Discharge Flow - Low (Bypass) h. Manual Initiation AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "A" [#]	1 1 1 1 1	1, 2, 3 4*, 5* 1, 2, 3 4*, 5* 1, 2, 3, 4*, 5* 1, 2, 3, 4* 5* 1, 2, 3, 4*, 5*	PY-CEI/NRR-1694 Attachment 2 Page 10 of 54 331 231 23 33 33 33 33 33 33 33
	2.	 AUTOMATIC DEPRESSORIZATION STSTEM THTP STSTEM TH a. Reactor Vessel Water Level - Low, Level 1 b. Manual Inhibit c. ADS Timer d. Reactor Vessel Water Level - Low, Level 3 (Permise. d. LPCS Pump Discharge Pressure - High (Permissive) f. LPCI Pump A Discharge Pressure - High (Permissive) g. Manual Initiation 	6	1, 2, 3 1, 2, 3	30 31 31 31 33 33
		Suprement	6 6	this supplement; however, see discussion for Action 31 within	Prese 1 or 3 No Changes per

PERRY - UNIT 1

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

		LEILAGENCI CONE COOLING	NAMES AND ADDRESS OF A DESCRIPTION OF A		
7010	CINC	TION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION(a)	APPLICABLE OPERATIONAL CONDITIONS	ACTION
IRIP	FUNC	TION	and the frequency of the second		
8.	DIVI	SION 2 TRIP SYSTEM			
	1.	RHR B AND C (LPCI MODE)	2(b)	1, 2, 3, 4*, 5*	30
		 a. Reactor Vessel Water Level - Low, Level 1 b. Drywell Pressure - High c. Reactor Vessel Pressure - Low (LPCI Injection Valve Permissive) 	2(b) 2(b) 1	1, 2, 3, 4*, 5* 1, 2, 3 1, 2, 3 4*, 5* 1, 2, 3, 4*, 5*	30 31 32 31 32
		 d. LPCI Pump B Start Time Delay Relay e. LPCI Pump Discharge Flow - Low (Bypass) f. Manual Initiation 	1/pump 1	1, 2, 3, 4*, 5* 1, 2, 3, 4*, 5*	NRR-1694 nent 2 of 54 9 3
	2.	AUTOMATIC DEPRESSURIZATION SYSTEM TRIP SYSTEM "B"#	(6)		
		 a. Reactor Vessel Water Level - Low, Level 1 b. Manual Inhibit c. ADS Timer d. Reactor Vessel Water Level - Low, Level 3 (Permission) e. LPCI Pump 8 and C Discharge Pressure - High (Permission) f. Manual Initiation 	2 ^(b) 1 1 sive) 1 issive) 2 2	1, 2, 3 1, 2, 3	* (1) 30 31 31 33 33 33
			7		
		이 그는 것이 아니는 것이 같은 것이 같아요.	Sin C		
			Action 21.	sieve see	PY-CEXAMERT PY-CEXAMRR- Page 2 of 3
			7	for the	

	EMERGENCY CORE COOLING SYSTE	M ACTUATION INSTRUMENT	ATION	
TRIP	FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION(a)	APPLICABLE OPERATIONAL CONDITIONS	ACTION
	DIVISION 3 TRIP SYSTEM			
	 <u>HPCS SYSTEM</u> <u>Reactor Vessel Water Level - Low, Level 2</u> Drywell Pressure - High^{##} <u>Reactor Vessel Water Level - High, Level 8</u> <u>Condensate Storage Tank Level - Low</u> <u>Suppression Pool Water Level - High</u> <u>HPCS Pump Discharge Pressure - High (Bypass)</u> <u>HPCS System Flow Rate - Low (Bypass)</u> <u>Manual Initiation</u>^{##} 	4(b) 4(b) 4(c) 2(d) 2(d) 1 1	1, 2, 3, 4*, 5* 1, 2, 3 1, 2, 3, 4*, 5* 1, 2, 3, 4*, 5*	34 34 34 35 35 35 35 35 40 40 34 35 35 35 35 40 40 34 35 35 35 35 35 35 35 35 35 35 35 35 35
	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS OPERABLE TO TRIP CHANNELS	APPLICABLE OPERATIONAL CONDITIONS	ACT
D.	 LOSS OF POWER 1. 4.16 kv Emergency Bus Undervoltage ### 2/bus (Loss of Voltage) 2. 4.16 kv Emergency Bus Undervoltage ### 2/bus (Degraded Voltage) 	2/bus 2/bus 2/bus 2/bus	1, 2, 3, 4** 1, 2, 3, 4**	1
(b) (c) (d) * ** # #	A channel may be placed in an inoperable status for up to surveillance without placing the trip system in the trip other OPERABLE channel in the same trip system is menited Also actuates the associated division diesel generator. Provides signal to close HPCS pump injection valve only. Provides signal to HPCS pump suction valves only. When the system is required to be OPERABLE per Specifica Required when ESF equipment is required to be OPERABLE. Not required to be OPERABLE when reactor steam dome press The injection function of Drywell Pressure - High and Ma be OPERABLE with indicated reactor vessel water level or the Level 8 setpoint coincident with the reactor pressur The Loss of Voltage and Degraded Voltage functions are con-	ation 3.5.2 or 3.5.3. ssure is less than or e anual Initiation are no the wide range instru- re less than 450 psig.	REPLACE WITH INSERT +	Fight States Procent NRR-

3/4 3-30

PERRY - UNIT 1

PY-CEI/NRR-1694 L Attachment 2 Page 13 of 54

Insert for page 3/4 3-30:

(a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed as follows: (a) for up to 6 hours for Trip Functions C.1.f, C.1.g, and C.1.h; and (b) for up to 6 hours for Trip Functions other than C.1.f, C.1.g, and C.1.h provided the associated Trip Function maintains ECCS initiation capability.

PY-CEI/NRR-1694 Attachment 2

Attachment 2

Page 14 of 50

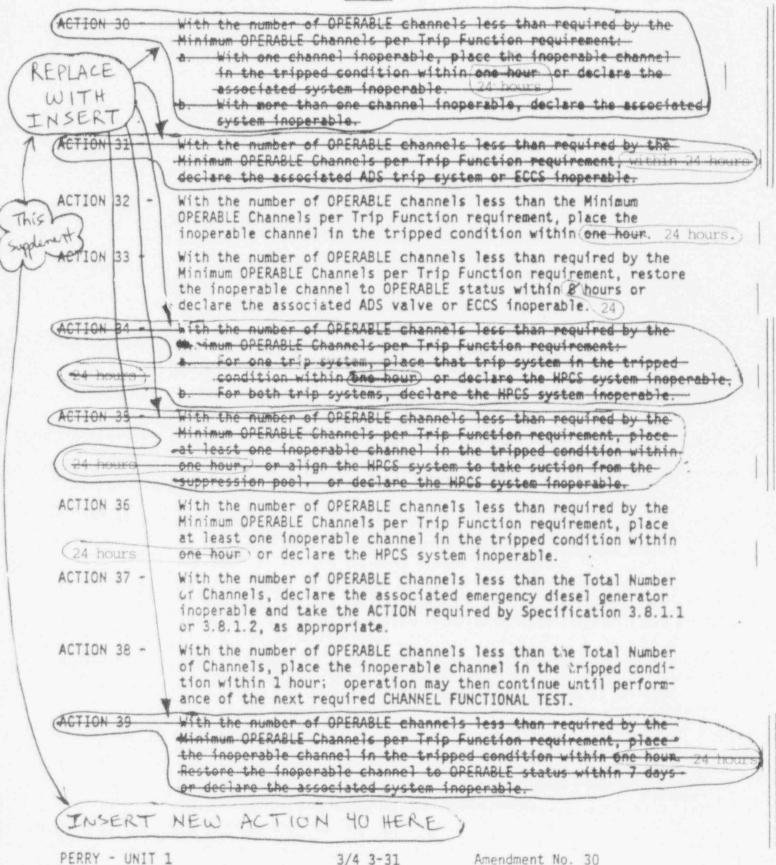
PY-CEDARR-1496 L

Page 14 of 54

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION

TABLE 3.3.3-1 (Continuec,



PY-CEI/NRR-1694 L Attachment 2 Page 15 of 54

Inserts for page 3/4 3-31:

- ACTION 30 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip Function requirement, verify within one hour that a sufficient number of channels remain OPERABLE or are in the tripped condition to maintain automatic actuation capability of either Division 1 or Division 2 ECCS and either ADS Trip System A or Trip System B, and place the inoperable channel(s) in the tripped condition within 24 hours. Otherwise, declare the associated system(s) inoperable.
- Action 31 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip Function requirement, verify within one hour that a sufficient number of channels remain OPERABLE to maintain automatic actuation capability of either Division 1 or Division 2 ECCS and either ADS Trip System A or Trip System B, and restore the inoperable channel(s) to OPERABLE status within 24 hours. Otherwise, declare the associated ADS trip system(s) or ECCS inoperable.
- Action 34 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip Function requirement, verify within one hour that a sufficient number of channels remain OPERABLE or are in the tripped condition to maintain automatic HPCS actuation capability, and place the inoperable channel(s) in the tripped condition within 24 hours. Otherwise, declare the HPCS system inoperable.
- Action 35 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip Function requirement, verify within one hour that the HPCS pump suction is either aligned or is capable of automatically realigning to the suppression pool, and place at least one inoperable channel in the tripped condition within 24 hours. Otherwise, declare the HPCS system inoperable.
- Action 39 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip Function requirement, verify within one hour that a sufficient number of channels remain OPERABLE to maintain automatic actuation capability of either Division 1 or Division 2 ECCS, and restore the inoperable channel(s) to OPERABLE status within 7 days. Otherwise, declare the associated system(s) inoperable.
- Action 40 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip Function requirement, restore the inoperable channel(s) to OPERABLE status within 7 days. Otherwise, declare the HPCS system inoperable.

PY-CEI/NRR-1694	
Attachment 2	PY-CEPAURR-1496 L
Page 16 of 54	Page 18 of 50

WITH

INSERT

INSTRUMENTATION

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

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

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

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

With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both trip systems, place the inoperable channel(s) in the tripped condition within one hour. 24 hours.

- c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system and:
 - If the inoperable channels consist of one reactor vessel water level channel and one reactor vessel pressure channel, place both inoperable channels in the tripped condition* within one hour. 24 hours.
 - If the inoperable channels include two reactor vessel water level channels or two reactor vessel pressure channels, declare the trip system inoperable.
- d. With one trip system inoperable, restore the inoperable trip system to OPERABLE status within 72 hours or be in at least STARTUP within the next 6 hours.
 - . With both trip systems inoperable, restore at least one trip system to OPERABLE status within one hour or be in at least STARTUP within the next 6 hours.

SURVEILLANCE REQUIREMENTS

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

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

PERRY - UNIT 1

^{*}The inoperable channels need not be placed in the tripped condition where this would cause the Trip Function to occur. In this case, the inoperable channels shall be restored to OPERABLE status within 2 hours, or the trip system shall be declared inoperable.

PY-CEI/NRR-1694 L Attachment 2 Page 17 of 54

Insert for page 3/4 3-40:

- (b) With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip System requirement:
 - Verify that a sufficient number of channels remain OPERABLE or are in the tripped condition to maintain ATWS-RPT trip capability for:
 - a) either the low reactor vessel water level or the high reactor vessel pressure Trip Function within one hour, and
 - b) both the low reactor vessel water level or the high reactor vessel pressure Trip Functions within 72 hours, and
 - Place the inoperable channel(s) in the tripped condition within 14 days.

Otherwise, either remove the associated recirculation pump from service or be in at least STARTUP within the next six hours.

TABLE 3.3.4.1-1

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM TRIP FUNCTION 2 Reactor Vessel Water Level -1. Low, Level 2 2 Reactor Vessel Pressure - High 2. (a) One channel may be placed in an inoperable status for up to 2 hours for required surveillance provided the other channel is OPERABLE. RE NSER 0 -1 F P

PY-CEI/NRR-1694 Attachment 2 Page 18 of 54

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PERRY - UNIT 1

PY-CEI/NRR-1694 L Attachment 2 Page 19 of 54

Insert for page 3/4 3-41:

(a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed for up to 6 hours provided the associated Trip Function maintains ATWS-RPT trip capability. INSTRUMENTATION

PY-CEI/NRR-1694 Attachment 2 Page 20 of 54

Attachment 2 PY-CEMARR-1496 L Page 21 of SQ

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END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

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

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 40% of RATED THERMAL POWER. REPLACE

ACTION:

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

With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one op both trip systems, place the inoperable channel(s) in the tripped condition within one hour welve hours

- With the number of OPERABLE channels two or more less than required C. by the Minimum OPERABLE Channels per Trip System requirement for one trip system and
 - If the inoperable channels consist of one turbine control valve 1. channel and one turbine stop valve channel, place both inoperable channels in the tripped condition within (one hour, twelve hours.)
 - If the inoperable changels inslude two turbine control valve 2. channels or two turbine stop valve channels, declare the trip system inoperable.
- With one trip system inoperable, restore the imperable trip system d. to OPERABLE status within 72 hours or reduce THERMAL POWER to less than 40% of RATED THERMAL POWER within the next 6 hours.
- With both trip systems inoperable, restore at least one thip system е. to OPERABLE status within one hour or reduce THERMAL POWER to Jess than 40% of RATED THERMAL POWER within the next 6 hours.

PY-CEI/NRR-1694 L Attachment 2 Page 21 of 54

Insert for page 3/4 3-44:

- b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip System requirement:
 - Verify that a sufficient number of channels remain OPERABLE or are in the tripped condition to maintain EOC-RPT trip capability for both the turbine stop valve closure and turbine control valve fast closure Trip Functions within two hours, and
 - Place the inoperable channel(s) in the tripped condition within 72 hours.

Otherwise, either remove the associated recirculation pump fast speed breaker from service or reduce THERMAL POWER to less than 40% of RATED THERMAL POWER within the next 6 hours.

TABLE 3.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

TRIP	FUNCTION	MINIMUM OPERABLE CHANNELS) PER TRIP SYSTEM
1.	Turbine Stop Valve - Closure	2 ^(b)
2.	Turbine Control Valve - Fast Closure	2 ^(b)

The Turbine First Stag	e Pressure Bypass Setpoints peratures (see 3/4.2.2 for d	ling to 40% of RATED THERMAL POWER and corresponding Allowable Values efinition of ΔT). The Setpoints a	are adjusted
T(°F)	Setpoint (psig)	Allowable Value (pstg)	(HEEP P
$0 = T 0 < \Delta T < 50 50 < \Delta T < 100 100 < \Delta T < 170 $	< 212 < 190 < 168 < 146	<pre></pre>	NSERT
			This Supplement

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PY-CEI/NRR-1694 L Attachment 2 Page 23 of 54

Insert for page 3/4 3-46:

(a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed for up to 6 hours provided the associated Trip Function maintains EOC-RPT trip capability.

TABLE 3.3.5-1

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

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

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

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

One trip system with one-out-of-two logic. There is only one manual switch. (c)

(d)

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PY-CEI/NRR-1694 Attachment 2 Page 24 of 54

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PY-CEI/NRR-1694 L Attachment 2 Page 25 of 54

Insert for page 3/4 3-51:

(a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed as follows: (a) for up to 6 hours for Functional Unit e; and (b) for up to 6 hours for Functional Units other than e provided the associated Functional Unit maintains RCIC initiation capability.

PY-CEI/NRR-1694 Attachment 2 ALLachment Page 26 of 54 PY-CENRR-1496 L Page 25 of SQ TABLE 3.3.5-1 (continued) Supplemen REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION With the number of OPERABLE channels less than required by the ACTION SO Minimum OPERABLE Channels per Trip System requirement: a. For one trip system, place the inoperable channel(s) and/or REPLACE that trip system in the tripped condition within one hour WITH or declare the RCIC system inoperable. NSER For both trip systems, declare the RCIC system inoperable. With the number of OPERABLE channels less than required by the ACTION 51 -Minimum OPERABLE channels per Trip System requirement, declare the RCIC system inoperable, within 24 hours. With the number of OPERABLE channels less than required by the ACTION 52 Minimum OPERABLE Channels per Trip System requirement, place at least one inoperable channel in the tripped condition within one hour, or align the RCIC system to take suction from the ·24 hour suppression pool, or declare the RCIC system inoperable. ACTION 53 -With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within & hours or declare the RCIC system inoperable.

(24 hours)

PY-CEI/NRR-1694 L Attachment 2 Page 27 of 54

Insert for page 3/4 3-52:

- ACTION 50 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip System requirement, verify within one hour that a sufficient number of low reactor vessel water level channels remain OPERABLE or are in the tripped condition to maintain automatic RCIC system actuation capability, and place the inoperable channel(s) in the tripped condition within 24 hours. Otherwise, declare the RCIC system inoperable.
- ACTION 52 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip System requirement, verify within one hour that the RCIC pump suction is aligned or will automatically realign to the suppression pool, and place at least one inoperable channel in the tripped condition within 24 hours. Otherwise, declare the RCIC system inoperable.

PY-CEI/NRR-1694 Attachment 2 Page 28 of 54

TABLE 3.3.6-1 (Continued)

PY-CENER-1496 L Page 28 of 50

CONTROL ROD BLOCK INSTRUMENTATION

ACTION

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

ACTION 61 - With the number of OPERABLE Channels:

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

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

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

NOTES

- *With more than one control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.
- **OPERABLE channels must be associated with SRMs required OPERABLE per Specification 3.9.2.

#With IRMs on range 2 or below.

- (a)This function is automatically bypassed if detector count rate is > 100 cps or the IRM channels are on range 3 or higher.
- (b)This function is automatically bypassed when the associated IRM channels are on range 8 or higher.
- (c)This function is automatically bypassed when the IRM channels are on range 3 or higher.

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

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

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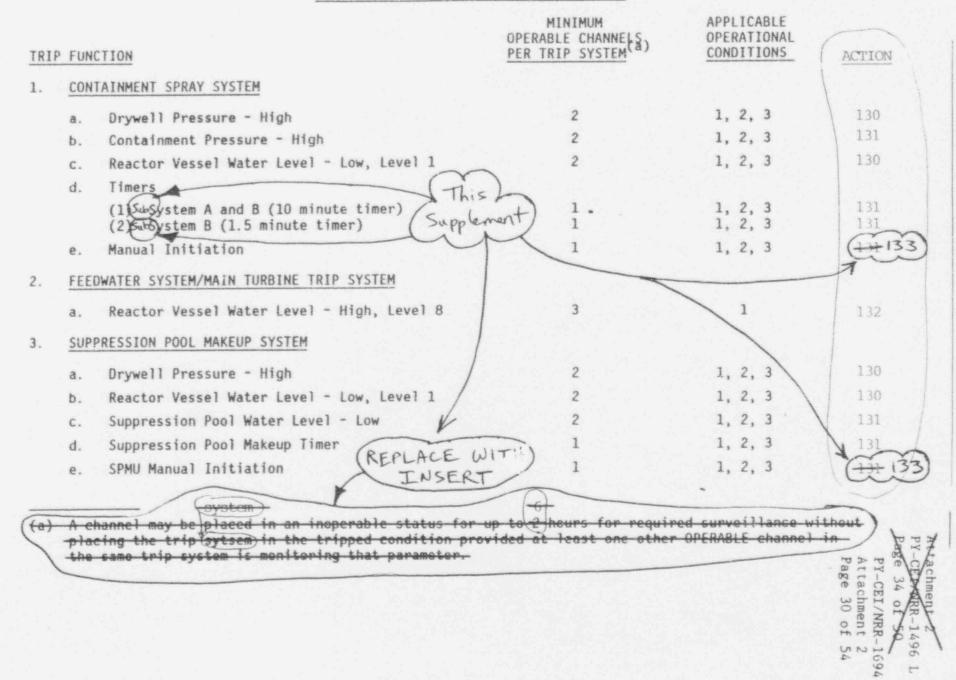
PY-CEI/NRR-1694 L Attachment 2 Page 29 of 54

Inserts for page 3/4 3-57:

- ACTION 62 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip Function requirement, verify within one hour that a sufficient number of channels remain OPERABLE to initiate a rod block by the associated Trip Function, and place at least one inoperable channel in the tripped condition within 24 hours. Otherwise, initiate a rod block.
- (e) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed for up to 6 hours provided the associated Trip Function maintains control rod block capability.

TABLE 3.3.9-1

PLANT SYSTEMS ACTUATION INSTRUMENTATION



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PY-CEI/NRR-1694 L Attachment 2 Page 31 of 54

Insert for page 3/4 3-100:

(a) When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed as follows: (a) for up to 6 hours for Trip Function 1.d.(2); and (b) for up to 6 hours for Trip Functions other than 1.d.(2) provided the associated Trip Function maintains Plant Systems actuation capability.

PY-CEI/NRR-1694 Attachment 2 Page 32 of 54 PY-CENARR-1496L Page 35 of 50

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TABLE 3.3.9-1 (Continued) PLANT SYSTEMS ACTUATION INSTRUMENTATION ACTIONS

With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels por Trip System requirement:

> With one channel inoperable, place the minoperable channel in the tripped mendition within 24 hours or declare the messeinted cyctem(s) inoperable.

With more than one channel ineperable, declare the associated cystem(c) comeporable.

ACTION 131

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ACTION 130

With the number of OPERABLE channels lose than required by the Minimum OPERABLE Channels per Trip System requirement, place the inoperable channel(s) in the tripped condition within 24 hours or declars the ascociated cystem(s) inoperable.

ACTION 132 -

- a. With the number of OPERABLE Channels one less than required by the Minimum OPERABLE Channels per Trip System requirement, restore the inoperable channel to OPERABLE status within 7 days or be in at least STARTUP within the next 6 hours.
- b. With the number of OPERABLE channels two less than required by the Minimum OPERABLE Channels per Trip System requirement, restore at least one of the inoperable channels to OPERABLE status within 72 hours or be in at least STARTUP within the next 6 hours.

INSERT NEW ACTION 133 HERE

PY-CEI/NRR-1694 L Attachment 2 Page 33 of 54

Inserts for newly created page of Table Actions:

- ACTION 130 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip System requirement, verify within one hour that a sufficient number of channels remain OPERABLE or are in the tripped condition to maintain automatic actuation capability of either subsystem A or subsystem B, and place the inoperable channel(s) in the tripped condition within 24 hours. Otherwise, declare the associated subsystem(s) inoperable.
- ACTION 131 With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip System requirement, verify within one hour that a sufficient number of channels remain OPERABLE to maintain automatic actuation capability of either subsystem A or subsystem B, and restore the inoperable channel(s) to OPERABLE status within 24 hours. Otherwise, declare the associated subsystem(s) inoperable.

ACTION 133 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels Per Trip System requirement, restore the inoperable channel(s) to OPERABLE status within 24 hours. Otherwise, declare the associated subsystem(s) inoperable.

PY-CEI/NRR-1694 Attachment 2 Page 34 of 54

PY-CENTRR-1496 L Page 37 of 50

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REACTOR COOLANT SYSTEM

3/4.4.2 SAFETY VALVES

SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.2.1 Of the following safety/relief valves, the safety valve function of at least 7 valves and the relief valve function of at least 6 valves other than those satisfying the safety valve function requirement shall be OPERABLE with the specified lift settings:

Number of Valves	Function	Setpoint* (psig)
8	Safety	1165 ± 11.6 psi
6	Safety	1180 ± 11.8 psi
5	Safety	1190 ± 11.9 psi
1	Relief	1103 ± 15 psi
9	Relief	1113 ± 15 psi
9	Relief	1123 ± 15 psi

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

- a. With the safety and/or relief valve function of one or more of the above required safety/relief valves inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- b. With one or more safety/relief valves stuck open, close the stuck open safety/relief valve(s); with suppression pool average water temperature 110°F or greater, place the reactor mode switch in the Shutdown position.
- c. With one or more safety/relief valve tail-pipe pressure switches inoperable, restore the inoperable switch(es) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- d. With either relief lve function pressure actuation trip system "A" or "B" inoperable, rest. e the inoperable trip system to OPERABLE status within 7 days; otherwise, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.4.2.1.1 The tail-pipe pressure switch for each safety/relief valve shall be demonstrated OPERABLE with the setpoint verified to be 30 ± 5 psig by performance of a:
a. CHANNEL FUNCTIONAL TEST at least once per 31 days, and a b. CHANNEL CALIBRATION at least once per 18 months.
4.4.2.1.2 The relief valve function pressure actuation instrumentation shall be demonstrated OPERABLE by performance of a:
This A. CHANNEL FUNCTIONAL TEST, including calibration of the trip unit, at least once per 31 days. 92
b. CHANNEL CALIBRATION, LOGIC SYSTEM FUNCTIONAL TEST** and simulated automatic operation of the entire system at least once per 18 months.

*The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures. **SRV solenoid energization shall be used alternating between the "A" solenoid

and the "B" solenoid.

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PY-CEI/NRR-1694 L Attachment 2 Page 35 of 54

Insert for page 3/4 4-7:

When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed for up to 6 hours provided the associated Function maintains Relief initiation capability.

PY-CEI/NRR-1694 Attachment 2 Page 36 of _- PY-CENARR-1496 L

Page 38 of 50

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REACTOR COOLANT SYSTEM

SAFETY/RELIEF VALVES LOW-LOW SET FUNCTION

LIMITING CONDITION FOR OPERATION

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

			t Function (psig) ± 15 psi	Relief Function Setpoint* (psig)				
	Valve No.	Öpen	Close	Open	Close			
	1821-F051D 1821-F051C 1821-F051A	1033 1073 1113	926 936 946		1003 ± 20 psi 1013 ± 20 psi 1013 ± 20 psi			
	1821-F0518 1821-F047F 1821-F051G	1113 1113 1113	946 946 946	1113 ± 15 psi	1013 ± 20 psi 1013 ± 20 psi 1013 ± 20 psi			

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

- a. With the relief valve function and/or the low-low set function of one of the above required reactor coolant system safety/relief valves inoperable, restore the inoperable relief valve function and the low-low set function to OPERABLE status within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With the relief valve function and/or the low-low set function of more than one of the above required reactor coolant system safety/relief valves inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- c. With either relief valve/low-low set function pressure actuation trip system "A" or "B" inoperable, restore the inoperable trip system to OPERABLE status within 7 days; otherwise, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.4.2.2.1 The relief valve function and the low-low set function pressure actuation instrumentation shall be demonstrated OPERABLE by performance of a:

- a. CHANNEL FUNCTIONAL TEST, including calibration of the trip unit, at least
- b. CHANNEL CALIBRATION, LOGIC SYSTEM FUNCTIONAL TEST and simulated automatic operation of the entire system at least once per 18 months.

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

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PY-CEI/NRR-1694 L Attachment 2 Page 37 of 54

Insert for page 3/4 4-8:

When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed for up to 6 hours provided the associated Function maintains Low-Low Set initiation capability.

PY-CEI/NRR-1694 Attachment 2 Page 38 of 54 Astachment 2

PY-CE ARR-1496L

3/4.3 INSTRUMENTATION

BASES

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

The reactor protection system automatically initiates a reactor scram to:

- a. Preserve the integrity of the fuel cladding.
- b. Preserve the integrity of the reactor coolant system.
- c. Minimize the energy which must be absorbed following a loss-of-coolant accident, and
- d. Prevent inadvertent criticality.

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

The reactor protection system is made up of two independent trip systems. There are usually four channels to monitor each parameter with two channels in each trip system. The outputs of the channels in a trip system are combined in a logic so that either channel will trip that trip system. The tripping of both trip systems will produce a reactor scram. The system meets the intent of IEEE-279 for nuclear power plant protection systems. The bases for the trip settings of the RPS are discussed in the bases for Specification 2.2.1.

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

PY-CEI/NRR-1694 Attachment 2 Page 39 of 54 PY-CEXARR-1496L Page 40 of 9

INSERT 6:

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P. "Technical Specification Improvement Analysis for BWR Reactor Protection System," as approved by the NRC and documented in the NRC Safety Evaluation Report (SER) letter to T. A. Pickens from A. Thadani dated July 15, 1987. In regards to ACTIONs a and b, Trip Capability is defined as each Functional Unit being capable of initiating a Reactor Protection System potuation (without considering a further cingle failure event).

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PY-CEI/NRR-1694 L Attachment 2 Page 40 of 54

Inserts for Bases page B 3/4 3-1:

ACTION b.1 is intended to ensure that appropriate actions are taken if a loss-of-function situation occurs during repairs of multiple, inoperable, untripped instrument channels. In regards to ACTION b.1, RPS "trip capability" is considered to be maintained when each "Functional Unit" identified in Table 3.3.3-1 has sufficient channels OPERABLE or in the tripped condition such that both trip systems will generate a trip signal upon receipt of a valid signal from that "Functional Unit" (without the need to consider a further single failure event).

The Functional Units identified in Table 3.3.1-1 are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed for up to 6 hours, provided the associated Functional Unit maintains trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable ACTIONs taken. This Note is based on the RPS reliability analysis assumption that 6 hours is the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour allowance does not significantly reduce the probability that the RPS will trip when necessary. INSTRUMENTATION

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PY-CEI/NRR-1694 Attachment 2 Page 41 of 54 PY-CEARR-1496L Page 41 of 50

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

This specification ensures the effectiveness of the instrumentation used to mitigate the consequences of accidents by prescribing the OPERABILITY trip setpoints and response times for isolation of the reactor systems. (When necessary, one channel may be inoperable for brief intervals to conduct required surveillance) Some of the trip settings may have tolerances explicitly stated where both the high and low values are critical and may have a substantial effect on safety. The setpoints of other instrumentation, where only the high or low end of the setting have a direct bearing on safety, are established at a level away from the normal operating range to prevent inadvertent actuation of the systems involved.

Except for the MSIVs, the safety analysis does not address individual sensor response times or the response times of the logic systems to which the sensors are connected. For D.C. operated valves, a 3 second delay is assumed before the valve starts to move. For A.C. operated valves, it is assumed that the A.C. power supply is lost and is restored by startup of the emergency diesel generators. In this event, a time of 13 seconds is assumed before the valve starts to move. In addition to the pipe break, the failure of the D.C. operated valve is assumed; thus the signal delay (sensor response) is concurrent with the 13-second diesel startup. The safety analysis considers an allowable inventory loss in each case which in turn determines the valve speed in conjunction with the 13-second delay. It follows that checking the valve speeds and the 13-second time for emergency power establishment will establish the response time for the isolation functions.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the busis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrumment drift specifically allocated for each trip in the safety analyses.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

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

(Insert 8)->

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analyses.

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PY-CEI/NRR-1694 Attachment 2 Page 42 of 54

Astachment 2 PY-CEARR-1496L Page 42 of 50

INSERT 7:

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-308512, Supplement 2, "Technical Specification Improvement Analysis for BWR Instrumentation Common to RPS and ECCS Instrumentation," as approved by the NRC and documented in the NRC Safety Evaluation Report (SER) letter to D.N. Grace from C.E. Rossi dated January 6, 1989 and NEDC-31677P, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation" as approved by the NRC and documented in the NRC SER letter to S.D. Floyd from C.E. Rossi dated June 18, 1990.

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Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30936P, Part 2, "Technical Specification Improvement Methodology (with Demonstration for BWR ECCS Actuation Instrumentation)" as approved by the NRC and documented in the NRC Safety Evaluation Report (SER) letter to D.N. Grace from C.E. Rossi dated December 9, 1988 (Part 2).

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PY-CEI/NRR-1694 L Attachment 2 Page 43 of 54

Inserts for top of Bases page B 3/4 3-2:

ACTION c.1 is intended to ensure that appropriate actions are taken if a loss-of-function situation occurs during repairs of multiple, inoperable, untripped instrument channels. In regards to ACTION c.1, "isolation capability" is considered to be maintained when sufficient channels are OPERABLE or in the tripped condition such that each "Trip Function" identified in Table 3.3.2-1 is capable of isolating the associated piping flow paths upon receipt of a valid signal from that "Trip Function" (without the need to consider a further single failure event). ACTION c.1 is not applicable to the Manual Initiation Trip Functions since they are not assumed in any accident or transient analysis. Thus, a total loss of manual initiation capability for up to 24 hours (as allowed by ACTION c.2) is permitted.

The Trip Functions identified in Table 3.3.2-1 are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed as fellows: (a) for up to 6 hours for Trip Function 5.m; and (b) for up to 6 hours for Trip Functions other than 5.m provided the associated Trip Function maintains isolation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable ACTIONs taken. This Note is based on the reliability analysis assumption that 6 hours is the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour allowance does not significantly reduce the probability that the isolation will occur when necessary.

Insert for bottom of Bases page B 3/4 3-2:

ACTIONS 30, 31, 34, 35 and 39 contain provisions to ensure that appropriate actions are taken if a loss-of-function situation occurs during repairs of multiple, inoperable, untripped instrument channels. In regard to ACTIONS 30, 31, 34, and 39, "automatic actuation capability" is considered to be maintained when sufficient channels are OPERABLE (or are in the tripped condition for ACTIONS 30 and 34) such that each "Trip Function" identified in Table 3.3.3-1 is capable of initiating an ECCS function upon receipt of a valid signal from that "Trip Function" (without the need to consider a further single failure event). For ECCS Divisions 1 and 2, each Trip Function should be able to initiate either Division 1 or Division 2; for ADS Trip Systems A and B, each ADS Trip Function should be able to initiate HPCS.

The Trip Functions identified in Table 3.3.3-1 (except for those in Section D of the Table) are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed as follows: (a) for up to 6 hours for Trip Functions C.1.f, C.1.g, and C.1.h; and (b) for up to 6 hours for Trip Functions other than C.1.f, C.1.g, and C.1.h provided the associated Trip Function or the redundant Trip Function (in the other Division) maintains ECCS initiation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable ACTIONs taken. This Note is based on the reliability analysis assumption that 6 hours is the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour allowance does not significantly reduce the probability that the ECCS will initiate when necessary.

PY-CEI/NRR-1694 Attachment 2 Page 44 of 54

Machment 9 PY-CEMER-1496L

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INSTRUMENTATION

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3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

The anticipated transient without scram (ATWS) recirculation pump trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an anticipated transient. The response of the plant to this postulated event falls within the envelope of study events in General Electric Company Topical Report NEDO-10349, dated March 1971 and NEDO-24222, dated December 1979, and Section 15.8 of the FSAR.

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

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

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Each EOC-RPT system may be manually bypassed by use of a keyswitch which is administratively controlled. The manual bypasses and the automatic Operating Bypass at less than 40% of RATED THERMAL POWER are annunciated in the control room.

The EOC-RPT system response time is the time assumed in the analysis between initiation of valve motion and complete suppression of the electric arc, i.e., 140 ms. Included in this time are: the time from initial valve movement to reaching the trip setpoint, the response time of the sensor, the response time of the system logic, and the time allotted for breaker arc suppression Suplemen

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Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analyses.

PY-CEI/NRR-1694 Attachment 2 Page 45 of 54 Achment

Bage 44 of

PY-CEMARR-1496L

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INSERT 9:

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-01, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications" as approved by the NRC and documented in the NRC Safety Evaluation Report (SER) letter to (R.D. Bigz) from (C. E. Rossidated July 21, 1992.)

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Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-01, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications" as approved by the NBC and documented in the NRC SER letter to D. Binz) from C.E. Kossi dated (July 21, 1972.)

Insert for Bases page B 3/4 3-3:

ACTIONS 3.3.4.1.b.1.a (ATWS-RPT) and 3.3.4.2.b.1 (End-of-Cycle RPT) are intended to ensure that appropriate actions are taken if a loss-of-function situation occurs during repairs of multiple, inoperable, untripped ATWS-RPT or EOC-RPT instrument channels. In regard to these ACTIONS, "RPT trip capability" is considered to be maintained when sufficient channels are OPERABLE or in the tripped condition such that each "Trip Function" identified in Table 3.3.4.1-1 (ATWS-RPT) and 3.3.4.2-1 (EOC-RPT) is capable of tripping both recirculation pumps upon receipt of a valid signal from that "Trip Function" (without the need to consider a further single failure event).

The Trip Functions identified in Table 3.3.4.1-1 and 3.3.4.2-1 are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONS may be delayed for up to 6 hours, provided the associated Trip Function maintains recirculation pump trip (ATWS or EOC-RPT) capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable ACTIONs taken. This Note is based on the reliability analysis assumption that 6 hours is the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour allowance does not significantly reduce the probability that the recirculation pumps will trip when necessary.

PY-CEI/NRR-1694 Attachment 2 Page 46 of 54 Attachment

PY-CEMARR-1496L

Page 45 of SQ

INSTRUMENTATION

BASES

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

The reactor core isolation cooling system actuation instrumentation is provided to initiate actions to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel.

[Insert 1]

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Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analyses.

3/4.3.6 CONTROL ROD BLOCK INSTRUMENTATION

The control rod block functions are provided consistent with the requirements of the specifications in Section 3/4.1.4, Control Rod Program Controls and Section 3/4.2 Power Distribution Limits. The trip logic is arranged so that a trip in any one of the inputs will result in a control rod block.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analyses.

3/4.3.7 MONITORING INSTRUMENTATION

3/4.3.7.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring instrumentation ensures that; (1) the radiation levels are continually measured in the areas served by the individual channels; (2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded; and (3) sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with 10 CFR Part 50, Appendix A, General Design Criteria 19, 41, 60, 61, 63 and 64.

3.4.3.7.2 SEISMIC MONITORING INSTRUMENTATION

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

3/4.3.7.3 METEOROLOGICAL MONITORING INSTRUMENTATION

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

PERRY - UNIT 1

PY-CEI/NRR-1694 Attachment 2 Page 47 of 54 ALachment

PY-CEDERR-1496L

Bage 46 of 50

Supplement

INSERT 11:

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30936P, Part 2, "Technical Specification Improvement Methodology (with Demonstration for BWR ECCS Actuation Instrumentation)" as approved by the NRC and documented in the NRC Safety Evaluation Report (SER) letter to D.N. Grace from C.E. Rossi dated December 9, 1988 (Part 2), and in accordance with GENE-770-06-01, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications" and GENE-770-06-02. "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications", which were approved by the NRC and documented in the SER letter to (R.D. Bing) from (C.E. Rossi) dated July 21, 1992, and in the SER letter to G. Beck from C.E. Rossi dated September 13, 1991, respectively. This

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Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation," as approved by the NRC and documented in the NRC Safety Evaluation Report (SER) letter to D.N. Grace from C.E. Rossi dated September 22, 1988, and in GENE-770-06-01, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications", which were approved by the NRC and documented in the SER letter to R.P.Binz from CE.Rossi dated July 21, 1992.

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PY-CEI/NRR-1694 L Attachment 2 Page 48 of 54

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ACTIONS 50 and 52 contain provisions to ensure that appropriate actions are taken if a loss-of-function situation occurs during repairs of multiple, inoperable, untripped instrument channels. In regards to ACTION 50, RCIC "automatic actuation capability" is considered to be maintained when sufficient channels are OPERABLE or are in the tripped condition such that each "Functional Unit" identified in Table 3.3.5-1 is capable of initiating the RCIC system upon receipt of a valid signal from that "Functional Unit" (without the need to consider a further single failure event).

The Functional Units identified in Table 3.3.5-1 are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed as follows: (a) for up to 6 hours for Functional Unit e; and (b) for up to 6 hours for Functional Units other than e provided the associated Functional Unit maintains RCIC actuation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable ACTIONs taken. This Note is based on the reliability analysis assumption that 6 hours is the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour allowance does not significantly reduce the probability that the RCIC System will initiate when necessary.

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ACTION 62 contains provisions to ensure that appropriate actions are taken if a loss-of-function situation occurs during repairs of multiple, inoperable, untripped instrument channels. In regards to ACTION 62, rod block initiation capability is considered to be maintained when sufficient channels remain OPERABLE such that each "Trip Function" identified in Table 3.3.6-1 is capable of inserting a rod block upon receipt of a valid signal from that "Trip Function" (without the need to consider a further single failure event).

The Trip Functions identified in Table 3.3.6-1 are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed for up to 6 hours, provided the associated Trip Function maintains control rod block capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable ACTIONs taken. This Note is based on the reliability analysis assumption that 6 hours is the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour allowance does not significantly reduce the probability that the control rod block will occur when necessary.

PY-CEI/NRR-1694 Attachment 2 Page 49 of 54 PY-CEMPR-1496L

Page 47 of 50

INSTRUMENTATION

BASES

Insert 13)

MONITORING INSTRUMENTATION (Continued)

3/4.3.9 PLANT SYSTEMS ACTUATION INSTRUMENTATION (Continued)

pressure and the feedwater system/main turbine trip system in the event of a failure of the feedwater controller under maximum demand. The LPCI mode of the RHR system is automatically initiated on a high drywell pressure signal and/or a low reactor water level, level 1, signal. The containment spray system will then actuate automatically following high drywell and high containment pressure signals. A 10-minute minimum and a 11.5-minute maximum time delay exists between initiation of LPCI and containment spray actuation. The suppression pool makeup system is automatically initiated on a low suppression pool water level signal with a concurrent LOCA signal or following a specified time delay after receipt of a LOCA signal.

A high reactor water level, level 8, signal will actuate the feedwater system/main turbine trip system.

PERRY - UNIT 1

B 3/4 3-7

PY-CEI/NRR-1694 Attachment 2 Page 50 of 54 PY-CHARR-1496L

Page 48 of 50

INSERT 13

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-01, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications" as approved by the NRC and documented in the NRC Safety Evaluation Report (SER) letter to A.P. Ginz, from C.E. Ross dated July 24, M12

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PY-CEI/NRR-1694 L Attachment 2 Page 51 of 54

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ACTIONS 130 and 131 contain provisions to ensure that appropriate actions are taken if a loss-of-function situation occurs during repairs of multiple, inoperable, untripped instrument channels. In regard to these ACTIONs, "automatic actuation capability" is considered to be maintained when sufficient channels are OPERABLE (or are in the tripped condition for ACTION 130) such that each "Trip Function" identified in Table 3.3.9-1 is capable of actuating their associated Plant system (either Containment Spray subsystem A or subsystem B; or either Suppression Pool Makeup subsystem A or subsystem B) upon receipt of a valid signal from that "Trip Function" (without the need to consider a further single failure event).

The Trip Functions identified in Table 3.3.9-1 are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed as follows: (a) for up to 6 hours for Trip Function 1.d.(2); and (b) for up to 6 hours for Trip Functions other than 1.d.(2) provided the associated Trip Function maintains the appropriate Plant Systems actuation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable ACTIONs taken. This Note is based on the reliability analysis assumption that 6 hours is the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour allowance does not significantly reduce the probability that the Plant Systems will initiate when necessary.

PY-CEI/NRR-1694 Attachment 2 Page 52 of 54

REACTOR COOLANT SYSTEM

BASES

SAFETY/RELIEF VALVES (Continued)

Demonstration of the safety-relief valve lift settings will occur only during shutdown and will be performed in accordance with the provisions of Specification 4.0.5.

The low-low set system ensures that safety/relief valve discharges are minimized for a second opening of these valves, following any overpressure transient. This is achieved by automatically lowering the closing setpoint of 6 valves and lowering the opening setpoint of 2 valves following the initial opening. In this way, the frequency and magnitude of the containment blowdown duty cycle is substantially reduced. Sufficient redundancy is provided for the low-low set system such that failure of any one valve to open or close at its reduced setpoint does not violate the design basis.

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3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

3/4.4.3.1 LEAKAGE DETECTION SYSTEMS

The RCS leakage detection systems required by this specification are provided to monitor and detect leakage from the reactor coolant pressure boundary. These detection systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems", May 1973.

3/4.4.3.2 OPERATIONAL LEAKAGE

The allowable leakage rates from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes. The normally expected background leakage due to equipment design and the detection capability of the instrumentation for determining system leakage was also considered. The evidence obtained from experiments suggests that for leakage somewhat greater than that specified for UNIDENTIFIED LEAKAGE the probability is small that the imperfection or crack associated with such leakage would grow rapidly. However, in all cases, if the leakage rates exceed the values specified or the leakage is located and known to be PRESSURE BOUNDARY LEAKAGE, the reactor will be shutdown to allow further investigation and corrective action.

The Surveillance Requirements for RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

PERRY - UNIT 1

PY-CENARR-1496L Page 49 of 50

PY-CEI/NRR-1694 Attachment 2 Page 53 of 54 PY-CEDARR-1496L Page 50 of 50

INSERT 14:

Specified surveillance intervals and surveillanc. and maintenance outage times have been determined in accordance with GENE-770-06-01, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications" as approved by the NRC and documented in the NRC Safety Evaluation Report (SER) letter to R.P. Bigs from CE Ress dated July 21, 1992

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PY-CEI/NRR-1694 L Attachment 2 Page 54 of 54

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The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated ACTIONs may be delayed for up to 6 hours, provided the associated Function maintains Safety Relief/Low-Low Set capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable ACTIONs taken. This Note is based on the reliability analysis assumption that 6 hours is the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour allowance does not significantly reduce the probability that the Relief valves/Low-Low Set will initiate when necessary.

PY-CEI/NRR-1694 L Attachment 3 Page 1 of 2

SIGNIFICANT HAZARDS CONSIDERATION

The standards used to arrive at a determination that a request for amendment involves no significant hazards considerations are included in the Commission's Regulations, 10CFR50.92, which state that the operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any previously evaluated, or (3) involve a significant reduction in a margin of safety.

The determination of no significant hazards submitted with the original request for amendment dated June 24, 1992 remains complete and accurate for that submittal. The following is a description of the determination made for the changes proposed in this letter.

The proposed amendment has been reviewed with respect to these three factors and it has been determined that the proposed changes do not involve a significant hazard because:

1. This proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The probability of occurrence of a previously evaluated accident is not increased because the instrumentation does not affect the initiation of any accident. The proposed changes do not alter the plant design or methods of operation. The revised wording will increase the assurance, for the vast majority of instruments and logics, that automatic initiation of the logic will be maintained while instrument surveillance testing or repair is performed.

The consequences of all previously evaluated accidents remains unchanged by this proposed revision. The revised wording assures that the automatic functions remain viable during surveillance testing or repairs, or requires that appropriate compensatory actions be taken. Since the present specifications do not require this check of the logic, the proposed revision actually has a beneficial result in the consequences of accidents, since the proposed change will assure automatic instrumentation actuation even while one instrument is being surveilled or repaired.

 This proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

The instrumentation involved are those instruments which sense plant problems and/or accidents, and then initiate systems or alarms to respond to the plant problem/accident. The proposed change does not modify any of the instruments, or the initiation logic formed by the instruments. Therefore, no new or different type of an accident has been created.

PY-CEI/NRR-1694 L Attachment 3 Page 2 of 2

 This proposed change does not involve a significant reduction in the margin of safety.

As stated above, this proposed change does not result in any plant modification nor change to plant operations. The proposed change will benefit the availability of the automatic initiation features of the instruments involved during surveillance testing or repairs, by now requiring that a check be made for the vast majority of the instruments to assure that making them inoperable for surveillance testing or repair does not result in a loss of function. This added check assures that a loss of function has not occurred, or if it has, that the Technical Specification ACTION statements be entered promptly. Thus, the margin of safety during surveillance tests and instrument repairs is either increased or is maintained consistent with the June 29, 1992 submittal; and the June 29, 1992 submittal previously justified that there is not a significant reduction in the margin of safety, based on the BWROG analysis results presented in the various Topical Feports on Surveillance Interval and Allowable Outage Time Extensions.