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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.1

Post Accident Monitoring (PAM) Instrumentation

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

DISCUSSION OF CHANGES (DOCs) TO THE CTS

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

MARKUP OF NUREG-1433, REVISION 1, SPECIFICATION

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1

MARKUP OF NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1, BASES

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.1

Post Accident Monitoring (PAM) Instrumentation

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

Specification 3.3.3.1

A1

3.2 (cont'd)	4.2 (cont'd)
E. Drywell Leak Detection	**E. Drywell Leak Detection** (See ITS: 3.4.5)
The limiting conditions for operation for the instrumentation that monitors drywell leak detection are given in Table 3.2-5.	Instrumentation shall be calibrated and checked as indicated in Table 4.2-5.
F. Feedwater Pump Turbine and Main Turbine Trip	**F. Feedwater Pump Turbine and Main Turbine Trip** (See ITS: 3.3.2.2)
The limiting conditions for operation for the instrumentation that provides a feedwater pump turbine and main turbine trip are given in Table 3.2-6.	Instrumentation shall be tested and calibrated as indicated in Table 4.2-6.
G. Recirculation Pump Trip	**G. Recirculation Pump Trip** (See ITS: 3.3.4.1)
The limiting conditions for operation for the instrumentation that trip(s) the recirculation pumps as a means of limiting the consequences of a failure to scram during an anticipated transient are given in Table 3.2-7.	Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-7. System logic shall be functionally tested as indicated in Table 4.2-7.
[3.3.3.1] ~~H.~~ Post (PAM) **Accident Monitoring Instrumentation**	[3.3.3.1] Post (PAM) **H. Accident Monitoring Instrumentation**
[LCO 3.3.3.1] The limiting conditions for operation for the instrumentation that provides accident monitoring are given in Table ~~3.2-8~~. 3.3.3.1-1	Instrumentation shall be demonstrated operable by performance of a channel check, channel calibration and functional test as indicated in ~~Table 4.2-8~~, as applicable. (SR 3.3.3.1.1, SR 3.3.3.1.2, SR 3.3.3.1.3) 3.3.3.1-1
A2 add Applicability →	
I. 4kv Emergency Bus Undervoltage Trip	**I. Not Used** (See ITS: 3.3.8.1)
The limiting conditions for operation for the instrumentation that prevents damage to electrical equipment or circuits as a result of either a degraded or loss-of-voltage condition on the emergency electrical buses are given in Table 3.2-2.	

Specification 3.3.3.1

[3.3.3.1-1]

TABLE 3.2-8

ACCIDENT MONITORING INSTRUMENTATION

	Function / Instrument	No. of Channels Provided by Design	Minimum No. of Operable Channels Required	Applicability: Mode in Which Instrument Must be Operable	proposed Required Action D.1 not satisfied: Action
1.	Stack High Range Effluent Monitor (17RM-53A) (17RM-53B)	2	1	Note H	Note B
2.	Turbine Building Vent High Range Effluent Monitor (17RM-434A) (17RM-434B)	2	1	Note H	Note B
3.	Radwaste Building Vent High Range Effluent Monitor (17RM-463A) (17RM-463B)	2	1	Note H	Note B
4.	Containment High Range Radiation Monitor (27RM-104A) (27RM-104B)	2	1	Note H	Note A
5.	Drywell Pressure (narrow range) (27PI-115A1 or 27PR-115A1) (27PI-115B1 or 27PR-115B1)	2	1	MODES 1 and 2	Note A
6.	Drywell Pressure (wide range) (27PI-115A2 or 27PR-115A2) (27PI-115B2 or 27PR-115B2)	2	1	MODES 1, 2	Note J / Note A
7.	Drywell Temperature (16-1TR-107) (16-1TR-108)	2	1	MODES 1, 2	Note J / Note A

* At less than or equal to 450 R/hr, closes vent and purge valves

Amendment No. 120, 181

Specification 3.3.3.1

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[3.3.3.1-1]

TABLE 3.2-6

ACCIDENT MONITORING INSTRUMENTATION

		Instrument	No. of Channels Provided by Design	Minimum No. of Operable Channels Required	Mode in Which Instrument Must be Operable	Action
[3]	8.	Torus Water Level (wide range) (23LI-202A or 23LR-202A/203A) 23LI-202B or 23LR-202B/203B)	2	1	Note J	Note A
[10]	9.	Torus Bulk Water Temperature (16-1TI-131A or 16-1TR-131A) (16-1TI-131B or 16-1TR-131B)	2	1	Note J	Note A
[9.]	10.	Torus Pressure (27PR-101A) (27PR-101B1)	2	1	Note J	Note A
[8]	11.	Primary Containment Hydrogen/Oxygen Concentration (27PCR-101A) (27PCR-101B)	2	1	Note J, K	Note F
[1]	12.	Reactor Vessel Pressure (06PI-61A or 06PR-61A) (06PI-61B or 06PR-61B)	2	1	Note J	Note A
[2.a]	13.	Reactor Water Level (fuel zone) (02-3LI-091) (02-3LR-098)	2	1	Note J	Note A
[2.b]	14.	Reactor Water Level (wide range) (02-3LI-85A) (02-3LR-85B)	2	1	Note J	Note A

RAI 3.3.3.1-1
RAI 3.3.3.1-2

RAI 3.3.3.1-10
& RS12.1

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[3.3.3.1-1]

Specification 3.3.3.1 (A1)

TABLE 3.2-8 (cont'd)

ACCIDENT MONITORING INSTRUMENTATION

[proposed Required Action D.1 not satisfied] (A5)

(LA1)

[Applicability]

Function / Instrument	No. of Channels Provided by Design	Minimum No. of Operable Channels Required	Mode in Which Instrument Must be Operable	Action
15. Core Spray Flow loop A (14FI-50A) loop B (14FI-50B)	1 per loop	1 per loop	Note J	Note A
16. Core Spray discharge pressure loop A (14PI-48A) loop B (14PI-48B)	1 per loop	1 per loop	Note J	Note A
17. LPCI (RHR) Flow loop A (10FI-133A) (10FR-143 - red pen) loop B (10FI-133B) (10FR-143 - blue pen)	2 per loop	1 per loop	Note J	Note A
18. RHR Service Water Flow loop A (10FI-132A) loop B (10FI-132B)	1 per loop	1 per loop	Note J	Note A
19. Safety/Relief Valve Position Indicator (See Note C)	2	1	Note J	Notes D, E
20. Torus Water Level (narrow range) (23LI-201A or 27R-101 - red pen or EPIC A-1258) (EPIC A-1260) (See Note G)	2	1	Note J	Note B
21. Drywell-Torus Differential Pressure (16-1DPR-200 or EPIC A-3554) (EPIC A-3551) (See Note G)	2	1	Note J	Note B

(Q2)

RAI 3.3.3.1-9 & BSI 20

(R1)

RAI 3.3.3.1-9 & BSI 20

TSTF 205 Rev. 3

RAI 3.3.3.1-2

(M3) Add proposed Function 7, PCIV Position (Penetration Flow Path)

Amendment No. 181

(M4) Add proposed Function 11, Drywell Water Level

77c

REVISION F

TABLE 3.2-8 (Cont'd)
ACCIDENT MONITORING INSTRUMENTATION

NOTES FOR TABLE 3.2-8

ACTION A

A. With the number of operable channels less than the required minimum, either restore the inoperable channels to operable status within 30 days, or be in a cold condition within the next 24 hours.

B. With the number of OPERABLE channels less than required by the minimum channels OPERABLE requirements, initiate an alternate method of monitoring the appropriate parameter(s) within 72 hours and: (1) either restore the inoperable channel(s) to OPERABLE status within 7 days of the event, or (2) prepare and submit a Special Report to the Commission within 14 days following the event outlining the cause of the inoperability, the action taken, and the plans and schedule for restoring the system to OPERABLE status.

C. Each Safety/Relief Valve is equipped with two acoustical detectors, one of which is in service. Each SRV also has a backup thermocouple detector. In the event that a thermocouple is inoperable, SRV performance shall be monitored daily with the associated in service acoustical detector.

D. From and after the date that both of the acoustical detectors are inoperable, continued operation is permissible until the next outage in which a primary containment entry is made provided that the thermocouple is operable. Both acoustical detectors shall be made operable prior to restart.

E. In the event that both primary (acoustical detectors) and secondary (thermocouple) indications of this parameter for any one valve are disabled and neither indication can be restored in forty-eight (48) hours, the reactor shall be in a Hot Shutdown condition within twelve (12) hours and in a Cold Shutdown within the next twenty-four (24) hours.

ACTION A

F. With the number of operable channels less than the required minimum, continued reactor operation is permissible for the following 30 days provided at least once each 24 hours, either the appropriate parameter(s) is monitored and logged using 27PCX-101A/B, or an appropriate grab sample is obtained and analyzed. If this condition can not be met, be in the Hot Shutdown mode within the next 12 hours. [ACTION E]

G. This parameter and associated instrumentation are not part of post-accident monitoring.

H. This instrument shall be operable in the Run, Startup/Hot Standby, and Hot Shutdown modes.

I. This instrument shall be operable in the Run and Startup/Hot Standby modes. [MODE 1, 2]

K. Primary containment atmosphere shall be continuously monitored for hydrogen and oxygen when in the Run and Startup/Hot Standby modes, except when the Post-Accident Sampling System (PASS) is to be operated. When the PASS is to be operated, the containment atmosphere monitoring systems may be isolated for a period not to exceed 3 hours in a 24-hour period.

[Co note] [Applicability]

add proposed Note 1 to ACTIONS

add proposed Note 2 to ACTIONS

[ACTION E] MODE 3 IN 12 hours

add ACTION F for containment Radiation

Specification 3.2.3.1

add ACTION B, for IIS 3.3.3.1 Functions 1-6 and 8-10

add ACTION C

add ACTION D for Functions 1-10

add ACTIONS A, B, C, D, E for Function 7

add ACTIONS A, B, C, D, E for Function 11

RAI 3.3.3.1-4

RAI 3.3.3.1-9 BS1-20

RAIS 3.3.3.1-1 and BS1-20

RAI 3.3.3.1-9 & 332.HO BS1-21

Specifications 3.3.3.1 A1

JAFNPP [3.3.3.1-1]

TABLE 4.2.8

MINIMUM TEST AND CALIBRATION FREQUENCY FOR ACCIDENT MONITORING INSTRUMENTATION

Post

	Function	Instrument	Instrument Functional Test (A6)	Calibration Frequency	Instrument Check (Channel)
	1.	Stack High Range Effluent Monitor	18M	18M	D
	2.	Turbine Building Vent High Range Effluent Monitor	18M	18M	D
	3.	Radwaste Building Vent High Range Effluent Monitor	18M	18M	D
[5]	4.	Containment High Range Radiation Monitor	R (See ITS: 3.3.6.1)	R [SR 3.3.3.1.3] 24 months	D [SR 3.3.3.1.1] 31 days (L6)
[4.a]	5.	Drywell Pressure (narrow range)	N/A (K1)	R	D
[4.b]	6.	Drywell Pressure (wide range)	N/A	R	D
[6]	7.	Drywell Temperature	N/A	R	D
[3]	8.	Torus Water Level (wide range)	N/A	R	D
[10]	9.	Torus Bulk Water Temperature	N/A	R	D
[9]	10.	Torus Pressure	N/A	R	D
[8]	11.	Primary Containment Hydrogen/Oxygen Concentration Analyzer	N/A	Q [SR 3.3.3.1.2]	D
[1]	12.	Reactor Vessel Pressure	N/A (A6)	R	D
[2.a]	13.	Reactor Water Level (fuel zone)	N/A	R	D
[2.b]	14.	Reactor Water Level (wide range)	N/A	R	D

RAI 3.3.3.1-10 & BSI 21

Amendment No. ~~3, 172, 181, 221~~, 233

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REVISION F

Specification 3.3.3.1

A1

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[3.3.3.1-1]

Post Accident Monitoring Instrumentation

TABLE 4.2-8 (cont'd)

MINIMUM TEST AND CALIBRATION FREQUENCY FOR ACCIDENT MONITORING INSTRUMENTATION

[SR 3.3.3.1.1]

RAI 3.3.3.1-9 & SI 20

	Function / Instrument	A6 Instrument Functional Test	[SR 3.3.3.1.3] Calibration Frequency	Instrument Check (Channel)	R2
15.	Core Spray Flow	N/A	R	D	
16.	Core Spray Discharge Pressure	N/A	R	D	
17.	LPCI (RHR) Flow	N/A	R	D	
18.	RHR Service Water Flow	N/A	R	D	
19.	Safety/Relief Valve Position Indicator (Primary and Secondary)	R	N/A	M	R1
20.	Torus Water Level (narrow range)	N/A	R	D	
21.	Drywell/Torus Differential Pressure	N/A	R	D	

RAI 3.3.3.1-10 & SI 21

M3 add SR 3.3.3.1.1 for Function 7 SR 3.3.3.1.3

M4 add SR 3.3.3.1 and SR 3.3.3.3 for Function 11

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.1

Post Accident Monitoring (PAM) Instrumentation

DISCUSSION OF CHANGES (DOCs) TO THE CTS

DISCUSSION OF CHANGES
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

ADMINISTRATIVE CHANGES

A1 In the conversion of the James A. FitzPatrick Nuclear Power Plant (JAFNPP) Current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes. Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the conventions in NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4", Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

A2 An Applicability for Post Accident Monitoring (PAM) instrumentation is proposed to be added to CTS 3.2.H consistent with the current requirements in CTS Table 3.2-8 Notes J (Run and Startup/Hot Standby modes). Changes to the current Applicability requirements for the Containment High Range Radiation Monitor is discussed in L2. The ITS 3.3.3.1 Applicability for Post Accident Monitoring (PAM) Instrumentation is MODES 1 and 2. Since the proposed Applicability is consistent with the CTS requirements except as discussed in L2, this change is considered administrative since it involves a change in presentation. This change is consistent with NUREG-1433, Revision 1.

A3 The Containment High Range Radiation Monitor Function of Table 3.2-8 performs a safety function by providing an automatic isolation of the containment vent and purge valves as indicated in the Table Footnote (*). The automatic isolation Function of the Containment High Range Radiation Monitor Function is being moved to ITS 3.3.6.1, Primary Containment Isolation Instrumentation. This change is consistent with NUREG-1433, Revision 1.

A4 A Note (Note 2 to ACTIONS) is proposed to be added to the Specification. These proposed changes provide more explicit instructions for proper application of the ACTIONS for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," Note 2 to the ACTIONS ("Separate condition entry is allowed for each....") and the wording for ACTION A ("one or more required Functions") provides direction consistent with the intent of the existing ACTION for an inoperable remote shutdown instrumentation channel. Since this change only provides more explicit direction of the current interpretation of the CTS, this change is considered administrative.

A5 The proposed format for ITS 3.3.3.1 includes an ACTION (ACTION D) that directs entry into the appropriate Conditions referenced in Table 3.3.3.1-1 when two channels in the same Function are inoperable and the Completion Time for restoration of one required channel has expired

ADMINISTRATIVE CHANGES

A5 (continued)

(i.e., proposed ACTION C). The ACTION has been added since not all Functions have the same ACTIONS when the required channels are not restored. This change represents a presentation preference only and is, therefore, considered administrative.

A6 CTS Table 4.2-8 "Instrument Functional Test" is not applicable to PAM instrumentation retained in proposed ITS Table 3.3.3.1-1, and is being deleted. The current testing practices of JAFNPP for these instruments perform only a channel check, due to the indication-only nature of these instruments. Therefore, this change is considered to be administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS Table 3.2-8 requirement for the "Minimum No. of Operable Channels Required", for Items 4 through 14, of 1 is being increased to 2, as indicated in ITS Table 3.3.3.1-1, Required Channels column. This will ensure that no single failure prevents the operators from being presented with the information necessary to determine the status of the plant and to bring the plant to, and maintain it in, a safe condition following an accident. This change is consistent with NUREG-1433, Revision 1.

Along with this change two additional ACTIONS have been added to minimize the time the plant operates with one or two inoperable channels. If one required channel is inoperable CTS Table 3.2-8 Note A or F will apply and the 30 days is permitted to restore the channel to Operable status. This action is retained in ITS 3.3.1 ACTION A for one inoperable channel for one or more Functions. If this ACTION cannot be met, action must be initiated in accordance with ITS 5.6.6 immediately (ITS 3.3.1 ACTION B). This specification will require a report to be written to the NRC which discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation. In addition, if two required channels are inoperable for one or more Functions ITS 3.3.3.1 ACTION C will allow 7 days to restore one inoperable channel.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 (continued)

The Completion Time is based on the relatively low probability of an event requiring the PAM instrument operations and the availability of alternate means to obtain the required information. This portion of the change is more restrictive since with both channels inoperable in the CTS, 30 days is allowed to restore the channel to Operable status. These actions are necessary to minimize the time operating with inoperable channels and to ensure alternative measures are taken to provide function capability.

When the more restrictive requirements of specifying 2 channels rather than 1 channel is considered, the incorporation of ITS CONDITION A is also a more restrictive change. Specifically, the application of ITS CONDITION A to 2 inoperable channels is more restrictive as the 30 day COMPLETION TIME required also applies to the second channel which will be required to be OPERABLE per ITS Table 3.3.3.1-1. Similarly, the application of ITS CONDITION C is more restrictive as the requirement applies to more than one channel. Accordingly, ITS CONDITIONS A and C are new requirements for channels not previously included in the Technical Specifications for the JAFNPP.

RAI 3.3.3.1-4

M2 CTS Table 3.2-8, Note A, requires the plant in cold shutdown in 24 hours if ACTIONS to restore required parameter monitors cannot be completed. ITS 3.3.3.1 ACTION E requires the plant to be in MODE 3 in 12 hours, if Required Action D.1 cannot be met. The Completion Time of 12 hours is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. The reduction in Completion Times to shutdown the plant constitutes a more restrictive change necessary to ensure timely action is taken to reduce power in an orderly manner to exit the Applicability of the PAM instrumentation.

M3 Requirements for the Penetration Flow Path PCIV position Function (ITS 3.3.3.1 Function 7) are proposed to be added. These requirements include an LCO, Applicability, Actions, and Surveillance Requirements. In addition, ISTS Notes (a) and (b) on ISTS Table 3.3.1.1-1 are also included. Both of these notes modify the operability requirements of the Penetration Flow Path PCIV Position Function. Requirements for PCIV position indication are included consistent with NUREG-1433, Revision 1 guidelines to include all Type A and Category 1 PAM instruments. The addition of new requirements constitutes a more restrictive change necessary to ensure the PCIV position indication remains Operable.

RAI 3.3.3.1-3
RAI 3.3.3.1-7

DISCUSSION OF CHANGES
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

TECHNICAL CHANGES - MORE RESTRICTIVE

M4 An additional instrument requirement is proposed to be added for the CTS Table 3.2-8, Drywell Water Level. There is no requirement for Drywell Water Level in the CTS. Two Drywell level channels are proposed to be added for the Drywell Water Level Function (ITS 3.3.3.1 Function 11). In the NYPA response to Regulatory Guide 1.97, NYPA specified that the Drywell Water Level instrument was Category 1 per the criteria provided in Regulatory Guide 1.97. Therefore, consistent with the NYPA response to Regulatory Guide 1.97 and with the provisions of NUREG-1433, Revision 1, this instrument and new Function is proposed to be added to the ITS as Function 11, Table 3.3.3.1-1. Appropriate ACTIONS to take if the new instruments are inoperable, and Surveillances to demonstrate operability, have been added. The addition of new instruments to Technical Specifications constitutes a more restrictive change.

RAI 3.3.3.1-10

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 The details relating to system design, in CTS Table 3.2-8 that provide the "No. of Channels Provided by Design" of the PAM Instrumentation are proposed to be relocated to the Bases of ITS 3.3.3.1. Placing these details in the Bases provides assurance they will be maintained. The details for system design are not necessary to ensure the PAM instruments are Operable. The requirements of ITS 3.3.3.1 which require the PAM instruments to be OPERABLE and the definition of OPERABILITY suffice. As such, these details are not required to be in the ITS to provide adequate protection of public health and safety. Changes to the Bases will be controlled by the provisions of the Bases Control Program described in Chapter 5 of the Technical Specifications.

LA2 The details relating to plant operation, in CTS Table 3.2-8 Note F, which requires monitoring and logging the parameters using 27PCX-101A,B or having a grab sample analyzed are being relocated to the Technical Requirements Manual (TRM). Placing these details in the TRM provides assurance they will be maintained. The remedial action of CTS Table 3.2-6, Note F, requires monitoring during normal plant operation, while the safety function for the PAM instrument is to provide information in a post-accident condition. Additional monitoring during normal operations does not provide an increase level of safety for the post-accident function. The increased monitoring during normal operations is appropriate, and may provide additional assurance of meeting SR 3.6.3.1.1 (primary containment oxygen concentration), but since this monitoring is not a compensatory measure for the PAM safety function, its relocation will not have any negative safety impact. As such, these details are not required to be in the ITS to provide

RAI 3.3.3.1-5

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA2 (continued)

adequate protection of public health and safety. At ITS implementation, the TRM will be incorporated by reference into the UFSAR. As such, changes to the relocated requirements in the TRM will be controlled by the provisions of 10 CFR 50.59.

NAE-233.1-1

LA3 Not Used.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 The details relating to the Instrument I.D. numbers for the Post Accident Monitoring instrumentation in CTS Table 3.2-8 are proposed to be deleted. These details are not necessary to ensure the Post Accident Monitoring instrumentation is maintained Operable. The requirements of ITS 3.3.3.1 (which describe the instrumentation) and the associated Surveillance Requirements are adequate to ensure the required instrumentation is maintained Operable. The Bases also provide a description of the type of instrumentation required by the specification.

L2 CTS Table 3.2-8, Note H Applicability requirement for Containment High Range Radiation Monitors, during the Run, Startup/Hot Standby, and Hot Shutdown modes, is proposed to be changed to MODES 1 and 2. Proposed ITS 3.3.3.1 Applicability requires PAM instrumentation only in MODES 1 and 2. These instruments should not be required in MODE 3 because they are required to monitor variables related to the diagnosis and preplanned actions required to mitigate design basis accidents occurring in MODES 1 and 2. In MODES 3, 4, and 5, plant conditions are such that the likelihood of an event that would require PAM instrumentation is extremely low. Therefore, the PAM instrumentation is not required to be OPERABLE in MODES 3, 4, and 5. Along with this change the default action to be in cold shutdown in CTS Table 3.2-8 Note A has been deleted. The new default Mode will be MODE 3 which is not within the proposed Applicability. This change is consistent with NUREG-1433, Revision 1.

L3 Currently, the CTS precludes MODE changes if a PAM instrument is inoperable. A Note (Note 1 to ITS 3.3.3.1 ACTIONS) is proposed to be added stating that LCO 3.0.4 is not applicable to proposed LCO 3.3.3.1 ACTIONS. This Note excludes this LCO from the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a plant shutdown. This exception is acceptable due to the passive

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 (continued)

function of the PAM instruments, the operator's ability to diagnose an accident using alternative instruments, and the low probability of an event requiring this system.

L4 CTS Table 3.2-8 Note A requirement to be in cold shutdown within 24 hours, when Item 4 (containment high radiation monitor) PAM channel has not been restored to operable status within 30 days, is being relaxed. ITS 3.3.3.1 ACTION F specifies initiating action in accordance with ITS 5.6.6. The action to submit a report is appropriate for the containment high radiation monitors since alternate means of monitoring primary containment area radiation have been developed and tested. Therefore, it is also appropriate to initiate action to submit a report in accordance with ITS 5.6.6.

RAI 3.3.3.1-2

L5 Not Used.

L6 CTS Table 4.2-8 Frequency, of daily, for the Channel Check,is being decreased. ITS SR 3.3.3.1.1 specifies a Frequency of 31 days. These instruments (including recorders) are highly reliable, and provide indication only. No automatic actions, relative to PAM, are performed by this instrumentation. The proposed Frequency is appropriate given the passive nature of these devices and the fact that the most common outcome of the performance of the surveillance is demonstrating theacceptance criteria are satisfied. These Frequencies are also consistent with NUREG 1433, Revision 1.

RAI 3.3.3.1-9

L7 Not Used.

TECHNICAL CHANGES - RELOCATIONS

R1 These instruments in CTS 3.2-8 and 4.2-8 (as listed below) are not credited as Category 1 or Type A variables. This evaluation was summarized in the NRC SER, dated March 14, 1988. Further, the loss of these instruments is a non-significant risk contributor to core damage frequency and offsite release. Therefore, the requirements specified for these Functions in CTS 3.2-8 and 4.2-8, including the applicable actions did not satisfy 10 CFR 50.36(c)(2)(ii) as documented in the Application or Selection Criteria to the JAFNPP Technical Specifications and are proposed to be relocated to the Technical Requirements Manual (TRM), the TRM will be incorporated by reference in the UFSAR at ITS implementation. Changes to the UFSAR will be controlled by the provisions of 10 CFR 50.59.

TECHNICAL CHANGES - RELOCATIONS

R1 (continued)

1. Stack High Range Effluent Monitor
2. Turbine Building Vent High Range Effluent Monitor
3 Radwaste Building Vent High Range Effluent Monitor
4. Safety/Relief Valve Position Indicator
5. Torus Water Level (narrow range)
6. Drywell-Torus Differential Pressure

R2 The NRC issued its SER on March 14, 1988, titled "Conformance to Regulatory Guide (R.G.) 1.97, Revision 2," for the JAFNPP. This SER identified the following Variables as Type A:

1. Residual heat removal system flow
2. Residual heat removal service water system flow
3. Core spray system flow
4. Core spray system pressure

The identification of these variables as Type A by the NRC in its SER was based on the Licensee identifying them as such to the NRC. Consistent with the Staff's SER, the CTS also identifies these four variables as Type A (i.e., CTS Table 3.2-8, items 15, 16, 17 and 18). Furthermore, the UFSAR also identifies these 4 variables as Type A (i.e., UFSAR Table 7.19-1, items A6, A9, A12, and A13).

After further review of this matter, the Licensee has concluded that these four variables can be reclassified from Type A and Category 1 to Type D and Category 2. This reclassification is consistent with the guidance provided by R.G. 1.97, Revision 2. The reclassification of these 4 variables is based on the following:

1. These four variables provide information which is not required to permit the control room operator to take specific manually controlled actions for which no automatic control is provided and thereby enable safety systems to accomplish their safety functions for design basis accidents.

2. These four variables do not provide primary information that is essential for the direct accomplishment of certain specified safety functions.

3. These four variables provide information which indicates the operation of individual safety systems.

RAI 3.3.3.1-9

TECHNICAL CHANGES - RELOCATIONS

R2 (continued)

4. These four variables provide information which helps the operator make appropriate decisions in using the individual systems important to safety in mitigating the consequences of an accident.

This reclassification is based on a review of the JAFNPP EOPs, the BWROG Emergency Procedure Guidelines and RG 1.97. Accordingly, these variables are reclassified as Type D and Category 2. As such, the reclassification of these variables results in them being a non-significant risk contributor to core damage frequency and offsite release.

The NRC position on application of the screening criteria to post-accident monitoring instrumentation is documented in a letter dated May 7, 1988 from T.E. Murley (NRC) to R.F. Janecek (BWROG). The position was that the post-accident monitoring instrumentation table list should contain, on a plant specific basis, all Regulatory Guide 1.97 Type A instruments specified in the plant's SER on RG 1.97, and all RG 1.97 Category 1 instruments.

Consistent with the NRC's guidance on this matter, and the Licensee's reclassification of these four variables, these variables are relocated to the Technical Requirements Manual (TRM). The TRM will be incorporated by reference in the UFSAR at ITS implementation. Changes to the UFSAR will be controlled by the provisions of 10 CFR 50.59.

R47

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.1

Post Accident Monitoring (PAM) Instrumentation

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The proposed change would delete the Instrument I.D. numbers for the Post Accident Monitoring Instrumentation. The Post Accident Monitoring Instrumentation is not considered as an initiator of any previously evaluated accident. The proposed change will not impact the ability of the Post Accident Monitoring Instrumentation to perform its intended function. Therefore, the proposed change will not increase the probability of any accident previously evaluated. Additionally, while the Post Accident Monitoring Instrumentation provides information to the operator that is used to mitigate an accident, this change does not affect the capability of the Post Accident Monitoring Instrumentation to perform this function. Therefore, the proposed change will not increase the consequences of any accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not involve physical modification to the plant. The Post Accident Monitoring Instrumentation provides information to the operator to assist in the mitigation of an accident. Under the proposed change, Operability of the Post Accident Monitoring Instrumentation is not impacted. Therefore, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   The proposed change would delete the Instrument I.D. numbers for the Post Accident Monitoring Instrumentation. These details are not necessary to ensure the Post Accident Monitoring Instrumentation is maintained Operable. The requirements of ITS 3.3.1 (which describe the instrumentation) and associated Surveillance Requirements are adequate to ensure the required instrumentation is maintained Operable. The proposed change will not impact the ability of the Post Accident

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

3. (continued)

Monitoring Instrumentation to perform its intended function. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L2 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   This change will limit the Applicability for Containment High Range Radiation monitors to those MODES during which design basis events are assumed to occur. Containment High Range Radiation monitors are not assumed to be initiators of any analyzed event. The role of these monitors is in providing the operators information during and after an accident to allow them to take mitigating actions, thereby limiting consequences. The variables monitored by the Containment High Range Radiation monitors are related to the diagnosis and preplanned actions required to mitigate design basis accidents (DBAs). The applicable DBAs are assumed to occur in MODES 1 and 2. The revision to the Applicability (and subsequent shutdown action to the non-applicable MODE) is being made consistent with the applicable DBA analyses. As a result, DBA consequences are not increased by this change. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not necessitate a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal operation. The proposed change will still ensure the Containment High Range Radiation monitors are maintained Operable in the MODES in which the applicable DBAs are assumed to occur. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   The change to the Applicability is being made consistent with the safety analysis assumptions. The Containment High Range Radiation monitors are

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L2 CHANGE

3. (continued)

provided to assist in the response to DBAs in the MODES which continue to be applicable. As such, the change still provides assurance the affected Containment High Range Radiation monitors will be maintained Operable during conditions when the DBAs, which require these instruments for mitigation, are assumed to occur. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L3 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Mode changes are proposed to be allowed with a Post Accident Monitoring (PAM) instrument inoperable. The PAM instrumentation is not considered to be an initiator for any previously evaluated accident. Therefore, the probability of an accident previously evaluated is not significantly increased. However, it does provide information to the operator of potential conditions following an accident. In the proposed conditions, sufficient indication or alternative methods to monitor the parameter will remain Operable to provide the operator with the information necessary to evaluate the potential conditions. Therefore, the proposed change will not significantly increase the consequences of any accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not introduce a new mode of plant operation and does not involve a physical modification to the plant. Therefore, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety since the proposed LCO will maintain adequate indications to the operator, and in addition will continue to provide appropriate compensatory measures.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L4 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The proposed change will relax the Required Actions for inoperable containment high radiation PAM channels that are not restored to service within the allowed out-of-service time. The current requirement is to be in cold shutdown within 24 hours when the required PAM channel has not been restored to operable status within 30 days. The proposed ACTION specifies initiating action in accordance with Specification 5.6.6. The PAM instrument channels are not assumed to be initiators of any analyzed event. The role of this instrumentation is to provide the operators information during and after an accident to allow them to take mitigating actions, thereby limiting consequences. The proposed change does not allow continuous operation such that a single failure could result in a loss of function since the report requires an alternate means be established to monitor the affected parameter. Additionally, the consequences of an event occurring with the proposed ACTIONS are no worse than the consequences of an event occurring with the existing shutdown actions. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not necessitate a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal operation. The proposed change will allow alternate means for monitoring the parameters be credited when PAM instrument channels are inoperable. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   The proposed change allowing continued operation provided alternate

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L4 CHANGE

3. (continued)

means of monitoring the affected parameter (containment high radiation monitor) are available is acceptable based on the small probability of an event requiring the PAM instrumentation, the passive function of these instruments, and the alternate means of monitoring the affected parameter. This alternate means must be established and available to utilize the provisions of the proposed action. Providing this proposed action will minimize the potential for plant transients that can occur during plant shutdowns. As such, any reduction in a margin of safety will be offset by the benefit gained by avoiding an unnecessary plant shutdown transient when alternate monitoring capability exists. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L5 CHANGE

Not Used.

NAT - 3.3.3.1-2

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L6 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The change will increase the surveillance intervals to allow performance of a Channel Check once every month. The affected instruments are not considered as initiators for any accidents previously analyzed. Therefore, this change does not significantly increase the probability of a previously analyzed accident. Further, an increase of the surveillance interval will not affect the capability of the component or system to perform its functions (i.e., its readability). Operating experience has shown that a 30 day frequency is sufficient. Therefore, this change does not significantly increase the consequences of a previously analyzed accident.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. Therefore, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   The change will increase the surveillance intervals to allow performance of a Channel Check once every month. This change does not involve a significant reduction in a margin of safety since experience has shown that similar components usually pass the Surveillance and maintain necessary accuracy when performed at the proposed frequency. Operating experience has shown that a 30 day frequency is sufficient. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

TECHNICAL CHANGE - LESS RESTRICTIVE (SPECIFIC)

L7 CHANGE

Not Used.

RAI 3.3.1-9

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.1

Post Accident Monitoring (PAM) Instrumentation

MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION

RAI 3.3.3.1-1 and 3.3.3.1-2

TSTF 285 FO & PA 3.3.3.1-3

PA 3.3.3.1-4

3.3 INSTRUMENTATION

3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1-1 shall be OPERABLE.

CLB5

NOTE
Function 8 may be inoperable for up to 3 hours per 24 hour period during Post Accident sampling system operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

NOTES
1. LCO 3.0.4 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8. (6)	Immediately PA1
C. NOTE Not applicable to [hydrogen monitor] channels. X2 One or more Functions with two required channels inoperable.	C.1 Restore one required channel to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two [required hydrogen monitor] channels inoperable.	D.1 Restore one [required hydrogen monitor] channel to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition C or D not met.	E.1 Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
F. As required by Required Action E.1 and referenced in Table 3.3.3.1-1.	F.1 Be in MODE 3.	12 hours
G. As required by Required Action E.1 and referenced in Table 3.3.3.1-1.	G.1 Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

CLB1

NOTE
These SRs apply to each Function in Table 3.3.3.1-1.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1.1	Perform CHANNEL CHECK of each required PAM instrumentation channel	31 days
SR 3.3.3.1.2	Perform CHANNEL CALIBRATION of each required PAM instrumentation channel except for the Primary Containment H_2 and O_2 Concentration Function channels	[18] 24 months
SR 3.3.3.1.3	Perform CHANNEL CALIBRATION of each required PAM Primary Containment H_2 and O_2 Concentration Function channel.	92 days

[Table 4.2-8] CLB1 CLB4 CLB1 CLB1 [Table 4.2-8] CLB1

CLB2 Renumbering of Functions

[7] 6. Drywell Temperature 2 E CLB2

CLB2 PAM Instrumentation 3.3.3.1

a. Narrow Range 2 E
b. Wide Range 2 E

Table 3.3.3.1-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1
a. Fuel Zone	2	E
b. Wide Range	2	E
1. Reactor Steam Dome Pressure	2	E
2. Reactor Vessel Water Level	2	E
3. Suppression Pool Water Level	2	E
4. Drywell Pressure	2	E
5. Primary Containment Area Radiation	2	E
6. Drywell Sump Level	2	F
7. Drywell Drain Sump Level	2	F
8. PCIV Position	2 per penetration flow path(a)(b)	E
9. Wide Range Neutron Flux	2	F
10. Drywell H. & O. Analyzer	2	E
11. Containment H_2 & O_2 Analyzer	2	E
12. Primary Containment Pressure	2	E
13. Suppression Pool Water Temperature	2	E
Relief Valve Discharge Location[c]	2	E

(a) Not required for isolation valves whose associated penetration flow path is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.

(c) Monitoring each [relief valve discharge location].

Reviewer Note: Table 3.3.3.1-1 shall be amended for each plant as necessary to list:
1. All Regulatory Guide 1.97, Type A instruments, and
2. All Regulatory Guide 1.97, Category 1, non-Type A instruments specified in the plant's Regulatory Guide 1.97, Safety Evaluation Report.

11. Drywell Water Level 2 E

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.1

Post Accident Monitoring (PAM) Instrumentation

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 A 92 day Channel Calibration (SR 3.3.3.1.2) was added for the Primary Containment H_2 and O_2 Concentration channels. This requirement was added to maintain consistency with the current JAFNPP licensing basis, which requires a Channel Calibration every 3 months. This requirement is consistent with the manufacturers recommendation. The following SR was renumbered due to this change. In addition, due to this change, the Note to the Surveillance Requirements is not correct (all the SRs do not apply to each Function) and has been deleted. The CHANNEL CHECK SR has been modified to reflect that it applies to all PAM channels. In addition, ISTS SR 3.3.3.1.2 (ITS SR 3.3.3.1.3) has been revised to indicate it does not apply to the Primary Containment H_2 and O_2 Concentration Function Channel.

CLB2 JAFNPP plant specific PAM Instrumentation Functions and number of required channels were incorporated into Table 3.3.3.1-1, consistent with the Reviewer's Note. These changes are based on the current JAFNPP licensing basis and the requirements of NUREG-1433. The following Functions have been renumbered, as applicable.

CLB3 Footnote (c) in Table 3.3.3.1-1 was deleted since the details for CHANNEL OPERABILITY are included to the Bases. This change is consistent with the current requirements.

CLB4 The bracketed Frequency in ISTS SR 3.3.3.1.3 (SR 3.3.3.1.4) of 18 months has been changed to 24 months consistent with the requirements in CTS Table 4.2-8. This Frequency is adequate to ensure the channels remain Operable between surveillances and is consistent with the JAFNPP fuel cycle.

CLB5 The LCO has been revised to retain the allowance provided by Note K to CTS Table 3.2-8 for ITS 3.3.3.1 Function 8 (Primary Containment H_2 & O_2 Concentration).

CLB6 The bracketed TSTF-295 revisions associated with Suppression Pool Water Temperature (BWR NUREG-1433, ISTS Table 3.3.3.1-1, Function 13) are not incorporated in proposed JAFNPP ITS Table 3.3.3.1-1 (Function 10). This difference is consistent with current licensing requirements for Torus Bulk Water Temperature. All temperature sensors associated with a channel (irrespective of sensor location) are required to be OPERABLE for the channel to be OPERABLE except as indicated in the Bases.

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Reference to PAM Report revised to be consistent with the JAFNPP specific ITS numbering.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA2 The Specification has been modified to reflect plant specific nomenclature.

PA3 Reviewers Note deleted.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

None

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler number 295, Revision 0 have been incorporated into the revised Improved Technical Specifications.

RAI 3.3.1-3/8

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 Not Used.

RAI 3.3.1-

X2 The ISTS 3.3.6.1 Condition C Note and ACTION D, special Conditions for hydrogen monitor channels, have been deleted. The CTS requirements only require one Operable Primary Containment H_2 and O_2 monitor channel. Therefore operation is allowed at all times in the Applicable Modes with one of the two channels inoperable. With both channels inoperable, operation is allowed for 30 days as long as the parameter is monitored once each 24 hours or a grab sample is obtained. This requirement has been relocated to the Technical Requirements Manual to ensure the oxygen concentration is maintained within the limits of LCO 3.6.3.1 between Surveillance intervals. The deletion of ISTS 3.3.3.1 ACTION C Note and ACTION D will allow a 7 day Completion Time to restore one oxygen and hydrogen monitor channels when both are inoperable, as shown in ITS 3.3.3.1 ACTION C. There is no difference, with respect to their importance during an accident, between the H_2 and O_2 channels and other PAM instrumentation. The requirement to monitor H_2 and O_2

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X2 (continued)

concentration more frequently in the TRM will ensure the limits of oxygen are maintained within limits between the required Surveillances. In addition, the requirements have been renumbered, where applicable, to reflect this deletion.

X3 The brackets from ITS 3.3.3.1 ACTION F have been removed and the ACTION retained in the ITS in accordance with the argument provided by L4.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.1

Post Accident Monitoring (PAM) Instrumentation

MARKUP OF NUREG-1433, REVISION 1, BASES

B 3.3 INSTRUMENTATION

B 3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

BASES

BACKGROUND

The primary purpose of the PAM instrumentation is to display plant variables that provide information required by the control room operators during accident situations. This information provides the necessary support for the operator to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for Design Basis Events. The instruments that monitor these variables are designated as Type A, Category I, and non-Type A, Category 1, in accordance with Regulatory Guide 1.97 (Ref. 1).

PAI

The OPERABILITY of the accident monitoring instrumentation ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. This capability is consistent with the recommendations of Reference 1.

APPLICABLE SAFETY ANALYSES

The PAM instrumentation LCO ensures the OPERABILITY of Regulatory Guide 1.97, Type A variables so that the control room operating staff can:

- Perform the diagnosis specified in the Emergency Operating Procedures (EOPs). These variables are restricted to preplanned actions for the primary success path of Design Basis Accidents (DBAs), (e.g., loss of coolant accident (LOCA)), and
- Take the specified, preplanned, manually controlled actions for which no automatic control is provided, which are required for safety systems to accomplish their safety function.

PAI

The PAM instrumentation LCO also ensures OPERABILITY of Category 1, non-Type A, variables so that the control room operating staff can:

- Determine whether systems important to safety are performing their intended functions;

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

- Determine the potential for causing a gross breach of the barriers to radioactivity release;
- Determine whether a gross breach of a barrier has occurred; and
- Initiate action necessary to protect the public and for an estimate of the magnitude of any ~~impending~~ threat.

The plant specific Regulatory Guide 1.97 Analysis (Ref. 2) documents the process that identified Type A and Category 1, non-Type A, variables.

Accident monitoring instrumentation that satisfies the definition of Type A in Regulatory Guide 1.97 meets Criterion 3 of the NRC Policy Statement. Category 1, non-Type A, instrumentation is retained in Technical Specifications (TS) because they are intended to assist operators in minimizing the consequences of accidents. Therefore, these Category 1 variables are important for reducing public risk.

LCO

LCO 3.3.3.1 requires two OPERABLE channels for all but one Function to ensure that no single failure prevents the operators from being presented with the information necessary to determine the status of the plant and to bring the plant to, and maintain it in, a safe condition following ~~that~~ an accident.

Furthermore, provision of two channels allows a CHANNEL CHECK during the post accident phase to confirm the validity of displayed information. [More than two channels may be required at some plants if the Regulatory Guide 1.97 analysis determined that failure of one accident monitoring channel results in information ambiguity (that is, the redundant displays disagree) that could lead operators to defeat or to fail to accomplish a required safety function.]

The exception to the two channel requirement is primary containment isolation valve (PCIV) position. In this case, the important information is the status of the primary containment penetrations. The LCO requires one position indicator for each active PCIV. This is sufficient to

(continued)

BASES

LCO (continued)

redundantly verify the isolation status of each isolable penetration either via indicated status of the active valve and prior knowledge of passive valve or via system boundary status. If a normally active PCIV is known to be closed and deactivated, position indication is not needed to determine status. Therefore, the position indication for valves in this state is not required to be OPERABLE.

RAI 3.3.3.1-9/10 BSI 2/1/21

The following list is a discussion of the specified instrument Functions listed in Table 3.3.3.1-1 in the accompanying LCO. These discussions are intended as examples of what should be provided for each Function when the plant specific list is prepared.

PA3

Vessel PA2

1. Reactor Steam Dome Pressure

PA2 Vessel

1 PA1

Reactor steam dome pressure is a Category 1 variable provided to support monitoring of Reactor Coolant System (RCS) integrity and to verify operation of the Emergency Core Cooling Systems (ECCS). Two independent pressure transmitters with a range of 0 psig to 1500 psig monitor pressure. Wide range recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

and associated independent

DB1

ese S PA1

2. Reactor Vessel Water Level

DB1 reactor vessel 1 PA1

Reactor vessel water level is a Category 1 variable provided to support monitoring of core cooling and to verify operation of the ECCS. The wide range water level channels provide the PAM Reactor Vessel Water Level Function. The wide range water level channels measure from 17 inches below the dryer skirt down to a point just below the bottom of the active fuel. Wide range water level is measured by two independent differential pressure transmitters. The output from these channels is recorded on two independent pen recorders, which is the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

reactor vessel DB1

INSERT LCO-2 DB1

ese S PA1

(continued)

DBI

INSERT LCO-2

cover a range from -150 inches (just below the bottom of the active fuel) to +224.5 inches, as referenced (zero) from the top of active fuel (TAF). Reactor vessel water level is measured in overlapping stages by separate independent differential pressure transmitters. Two reactor vessel water level (fuel zone) channels monitor the range from -150 inches to +200 inches (TAF). One fuel zone channel consists of a transmitter and indicator and the other channel consists of a transmitter and recorder. Two reactor vessel water level (wide range) channels monitor the range from +14.5 inches to +224.5 inches (TAF). The upper limit corresponds to a level 63.5 inches below the centerline of the main steam lines. Likewise, one wide range channel consists of a transmitter and indicator and the other channel consists of a transmitter and recorder. These transmitters and associated indicators and recorders provide

RAI 3.3.1-4 / RAI 3.3.1-10

BASES

LCO

2. Reactor Vessel Water Level (continued)

The wide range water level instruments are uncompensated for variation in reactor water density and are calibrated to be most accurate at operational pressure and temperature.

3. Suppression Pool Water Level

Suppression pool water level is a Category 1 variable provided to detect a breach in the reactor coolant pressure boundary (RCPB). This variable is also used to verify and provide long term surveillance of ECCS function. The wide range suppression pool water level measurement provides the operator with sufficient information to assess the status of both the RCPB and the water supply to the ECCS. The wide range water level indicators monitor the suppression pool water level from the center line of the ECCS suction lines to the top of the pool. Two wide range suppression pool water level signals are transmitted from separate differential pressure transmitters and are continuously recorded on two recorders in the control room. These recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

4. Drywell Pressure

Drywell pressure is a Category 1 variable provided to detect breach of the RCPB and to verify ECCS functions that operate to maintain RCS integrity. Two wide range drywell pressure signals are transmitted from separate pressure transmitters and are continuously recorded and displayed on two control room recorders. These recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

5. Primary Containment Area Radiation (High Range)

Primary containment area radiation (high range) is provided to monitor the potential of significant radiation releases of radioactive material and to provide release assessment for use by operators in determining the need to invoke site emergency plans.

(continued)

DBI

INSERT LCO-4

cover a range of -5 psig to +250 psig. The drywell pressure is measured in overlapping stages by separate independent pressure transmitters. Two drywell pressure (narrow range) channels monitor the range from -5 psig to +5 psig. Two drywell pressure (wide range) channels monitor the range from 0 psig to 250 psig. Each drywell pressure channel consists of a separate independent transmitter with an associated indicator and recorder in the control room. These transmitters and associated indicators and recorders provide

CLB1 numbering

BASES

LCO

DB1

5. ~~Primary~~ Containment Area Radiation (High Range)
(continued)

INSERT LCO-5 → this plant, primary containment area radiation (high range) PAM instrumentation consists of the following:]

CLB1

6. Drywell Sump Level

Drywell sump level is a Category I variable provided for verification of ECCS functions that operate to maintain RCS integrity. [For this plant, the drywell sump level PAM instrumentation consists of the following:]

7. Drywell Drain Sump Level

Drywell drain sump level is a Category I variable provided to detect breach of the RCPB and for verification and long term surveillance of ECCS functions that operate to maintain RCS integrity. [For this plant, the drywell drain sump level PAM instrumentation consists of the following:]

CLB1

INSERT LCO-6

CLB1

7 → 8. Primary Containment Isolation Valve (PCIV) Position

a Category 1 variable

PAI

PCIV position is provided for verification of containment integrity. In the case of PCIV position, the important information is the isolation status of the containment penetration. The LCO requires one channel of valve position indication in the control room to be OPERABLE for each active PCIV in a containment penetration flow path, i.e., two total channels of PCIV position indication for a penetration flow path with two active valves. For containment penetrations with only one active PCIV having control room indication, Note (b) requires a single channel of valve position indication to be OPERABLE. This is sufficient to redundantly verify the isolation status of each isolable penetration via indicated status of the active valve, as applicable, and prior knowledge of passive valve or system boundary status. If a penetration flow path is isolated, position indication for the PCIV(s) in the associated penetration flow path is not needed to determine status. Therefore, the position indication for valves in an isolated penetration flow path is not required to be OPERABLE.

X5

Footnote

Insert Footnote (a)

X5

TA1

Each penetration is treated separately and each penetration flow path is considered a separate Function. Therefore, separate Condition entry is allowed for each inoperable penetration flow path.

(continued)

TSTF-285-R2

DB1

INSERT LCO-5

Two physically separated and redundant radiation detectors with a range of 1 R/hr to 10 E8 R/hr are located inside the drywell. The detectors provide a signal to separate process radiation monitors located in the control room. These radiation detectors and associated monitors provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

CLB1

INSERT LCO-6

6. Drywell Temperature

Drywell temperature is a Category 1 variable provided to detect a breach in the RCPB and to verify ECCS functions that operate to maintain RCS integrity. Two drywell temperature channels monitor the range from 40°F to 440°F. Each drywell temperature channel consists of a separate temperature sensor, with an associated indicator and recorder in the control room. These temperature sensors and associated recorders provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

X5

INSERT Footnote (a)

Therefore, this Function is not required for isolation valves whose associated penetration flow path is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured (as noted in footnote (a) to Table 3.3.3.1-1).

BASES

LCO

8. Primary Containment Isolation Valve (PCIV) Position (continued)

[For this plant, the PCIV position PAM instrumentation consists of the following:]

9. Wide Range Neutron Flux

Wide range neutron flux is a Category I variable provided to verify reactor shutdown. [For this plant, the wide range neutron flux PAM instrumentation consists of the following:]

10. 11. Drywell and Containment Hydrogen and Oxygen Analyzers

Drywell and containment hydrogen and oxygen analyzers are Category 1 instruments provided to detect high hydrogen or oxygen concentration conditions that represent a potential for containment breach. This variable is also important in verifying the adequacy of mitigating actions. [For this plant, the drywell and containment hydrogen and oxygen analyzers PAM instrumentation consists of the following:]

12. Primary Containment Pressure

Primary containment pressure is a Category 1 variable provided to verify RCS and containment integrity and to verify the effectiveness of ECCS actions taken to prevent containment breach. [Two wide range primary containment pressure signals are transmitted from separate pressure transmitters and are continuously recorded and displayed on two control room recorders.] These recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channel.

13. Suppression Pool Water Temperature

Suppression pool water temperature is a Category 1 variable provided to detect a condition that could potentially lead to containment breach and to verify the effectiveness of ECCS actions taken to prevent containment breach. The

(continued)

DBI

INSERT LCO-7

The PCIV position PAM instrumentation consists of position switches mounted on the valves for the positions to be indicated, associated wiring and control room indicating lamps for active PCIVs (check valves and manual valves are not required to have position indication). These position swithces and associated indicators in the control room provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

DBI

INSERT LCO-8

The primary containment hydrogen and oxygen concentration channels consists of two redundant analyzers. Each analyzer contains a hydrogen and an oxygen detector. Each analyzer can be aligned to sample air from one of four sample points (3 points in the drywell and 1 point in the suppression chamber). Sample air passes through the hydrogen analyzer and the oxygen analyzer and is returned to the suppression chamber air space. During normal operation, the Division I analyzer samples the suppression chamber and the Division II analyzer samples the drywell. The analyzers are capable of determining oxygen concentration in the range of 0 to 30%, which meets the requirements of Reference 1. The hydrogen and oxygen concentration from each analyzer may be displayed on its associated recorder in the relay room. Therefore, the PAM Specification deals specifically with these portions of the instrument channel. A Note allows the primary containment hydrogen and oxygen concentration channels to be inoperable for up to 3 hours per 24 hour period during Post Accident Sampling System (PASS) operation. PASS operation includes realignment from or to the mode. Operation of the PASS may require isolation of the primary containment hydrogen and oxygen concentration channels. This allowance will ensure that the PASS can perform its post accident monitoring function (Ref. 4) while minimizing the time the primary containment hydrogen and oxygen concentration channels are isolated.

RAI 3.3.4-1 (and) RAI 3.3.1-2

BASES

LCO

13. Suppression Pool Water Temperature (continued)

suppression pool water temperature instrumentation allows operators to detect trends in suppression pool water temperature in sufficient time to take action to prevent steam quenching vibrations in the suppression pool. Twenty-four temperature sensors are arranged in six groups of four independent and redundant channels, located such that there is a group of sensors within a 30 ft line of sight of each relief valve discharge location.

Thus, six groups of sensors are sufficient to monitor each relief valve discharge location. Each group of four sensors includes two sensors for normal suppression pool temperature monitoring and two sensors for PAM. The outputs for the PAM sensors are recorded on four independent recorders in the control room (channels A and C are redundant to channels B and D, respectively). All four of these recorders must be OPERABLE to furnish two channels of PAM indication for each of the relief valve discharge locations. These recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channels.

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1 and 2. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1 and 2. In MODES 3, 4, and 5, plant conditions are such that the likelihood of an event that would require PAM instrumentation is extremely low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

ACTIONS

Note 1 has been added to the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to diagnose an accident using alternative instruments and methods, and the low probability of an event requiring these instruments.

(continued)

DB1 INSERT LCO-10

The suppression pool water temperature is monitored by two redundant channels. Each channel consists of sixteen resistance temperature detectors (RTDs) that monitor temperature over a range of 30°F to 230°F. The RTDs are mounted in thermowells spaced at equal intervals around the periphery of the suppression pool. The sixteen RTD signals are averaged and the resulting bulk temperature signal is sent to redundant indicating recorders in the control room. A minimum of fifteen out of sixteen RTDs are required for channel operability. An evaluation (Ref. 5) demonstrates that the maximum error in suppression pool bulk temperature measurement including channel uncertainty is < 4°F with active pool circulation. Thus a 4°F bias has been employed for conservatism. By specifying 15 RTDs the single failure criteria is accounted for. This evaluation conservatively assumed the failure of RTDs at locations that minimized indicated bulk suppression pool temperature and consequently maximized indicated error.

CCB1 INSERT LCO-11

11. Drywell Water Level

Drywell Water Level is a Category 1 variable provided to detect whether plant safety functions are being accomplished. Two drywell water level channels monitor the range from 22 feet to 106 feet. Each drywell water level channel consists of level transmitters, with an associated indicator and recorder in the control room. These level transmitters and associated indicators and recorders provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

BASES

ACTIONS (continued)

Note 2 has been provided to modify the ACTIONS related to PAM instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable PAM instrumentation channels provide appropriate compensatory measures for separate Functions. As such, a Note has been provided that allows separate Condition entry for each inoperable PAM Function.

RAI 3.3.3.1-3 & TSTF 295 RO

A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channels (or, in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

initiated by

PA1

low probability

an event

B.1

6 PA4

If a channel has not been restored to OPERABLE status in 30 days, this Required Action specifies initiation of action in accordance with Specification 5.6.8, which requires a written report to be submitted to the NRC. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation.

(continued)

BASES

ACTIONS (continued)

C.1

When one or more Functions have two required channels that are inoperable (i.e., two channels inoperable in the same Function), one channel in the Function should be restored to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur. Condition C is modified by a Note that excludes hydrogen monitor channels. Condition D provides appropriate Required Actions for two inoperable hydrogen monitor channels.

D.1

When two hydrogen monitor channels are inoperable, one hydrogen monitor channel must be restored to OPERABLE status within 72 hours. The 72 hour Completion Time is based on the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit; the length of time after the event that operator action would be required to prevent hydrogen accumulation from exceeding this limit; and the availability of the hydrogen recombiners, the Hydrogen Purge System, and the Post Accident Sampling System.

E.1

This Required Action directs entry into the appropriate Condition referenced in Table 3.3.3.1-1. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met any Required Action of Condition C or D, as applicable, and the associated Completion Time has expired, Condition E is entered for that channel and provides for transfer to the appropriate subsequent Condition.

(continued)

BASES

ACTIONS (continued)

E.1

For the majority of Functions in Table 3.3.3.1-1, if any Required Action and associated Completion Time of Condition C or D are not met, the plant must be brought to a MODE in which the LCO not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

F.1

Since alternate means of monitoring primary containment area radiation have been developed and tested, the Required Action is not to shut down the plant, but rather to follow the directions of Specification 5.6.8. These alternate means may be temporarily installed if the normal PAM channel cannot be restored to OPERABLE status within the allotted time. The report provided to the NRC should discuss the alternate means used, describe the degree to which the alternate means are equivalent to the installed PAM channels, justify the areas in which they are not equivalent, and provide a schedule for restoring the normal PAM channels.

SURVEILLANCE REQUIREMENTS

The following SRs apply to each PAM instrumentation Function in Table 3.3.3.1-1.

SR 3.3.3.1.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel against a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.3.1.1 (continued)

gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION. The high radiation instrumentation should be compared to similar plant instruments located throughout the plant. X4

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including isolation, indication, and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit. Channel PA2

The Frequency of 31 days is based upon plant operating experience, with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 31 day interval is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of those displays associated with the required channels of this LCO. by the PA1

For the PCIV Position Function, the CHANNEL CHECK consists of verifying the remote indication conforms to expected valve position.

X4

For the PCIV Position Function, the CHANNEL CALIBRATION consists of verifying the remote indication conforms to actual valve position.

CLB2

SR 3.3.3.1.2 and SR 3.3.3.1.3 CLB2

These SRs require to be

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies the channel responds to measured parameter with the necessary range and accuracy. CLB2

The 92 day Frequency for CHANNEL CALIBRATION of the Primary Containment Hydrogen and Oxygen Concentration channels is based on vendor recommendations.

CLB2

24 month DBL

The Frequency is based on operating experience and consistency with the typical industry refueling cycles. for CHANNEL CALIBRATION of all other PAM instrumentation of Table 3.3.3.1-1

Revision 3

REFERENCES

1. Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," [date]. May 1985 PA5 CLB3 PA5

2. [Plant specific documents (e.g., NRC Regulatory Guide 1.97, SER letter).]

INSERT REF

CLB3

CC03

INSERT REF

2. NRC letter, H. I. Abelson to J. C Brons dated March 14, 1988, regarding conformance to Regulatory Guide 1.97, Rev. 2. Includes NRR Safety Evaluation Report for Regulatory Guide 1.97 and James A. FitzPatrick Nuclear Power Plant.

3. 10 CFR 50.36(c)(2)(ii).

4. UFSAR Section 9.14.4.

5. DRF-T23-6681-1, Error in FitzPatrick Temperature Measurement Based on Monticello In-plant S/RV Test Data.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.1

Post Accident Monitoring (PAM) Instrumentation

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 JAFNPP plant specific PAM Instrumentation Functions and number of required channels were incorporated into ITS Table 3.3.3.1-1, consistent with the Reviewer's Note. These changes are based on the current JAFNPP licensing basis and the requirements of NUREG-1433. The associated Functions have been added to the Bases as required and the following Functions have been renumbered as required.

RAI 3.3.3.1-1 8/1 20/21

CLB2 The Bases description of the SRs have been revised to be consistent with the changes made to the Specification. A 92 day Channel Calibration (SR 3.3.3.1.2) was added for the Primary Containment H_2 and O_2 Concentration channels. This requirement was added to maintain consistency with the current JAFNPP licensing basis, which requires a Channel Calibration every 3 months. This requirement is consistent with the manufacturers recommendation. ISTS SR 3.3.3.1.2 (the CHANNEL CALIBRATION Surveillance) was renumbered due to this change. In addition, due to this change, the Note to the Surveillance Requirements is not correct (all the SRs do not apply to each Function) and has been deleted therefore the associated description of the Note in the Bases as well.

CLB3 The brackets have been removed and the proper plant specific licensing References included.

RAI 3.3.3.1-1/2

CLB4 The LCO Bases description has been revised to retain the allowance provided by Note K to CTS Table 3.2-8 for ITS 3.3.3.1 Function 8 (Primary Containment H_2 & O_2 Concentration).

RAI 3.3.3.1-6 TSTF 295 LO

CLB5 The TSTF-295 revisions associated with Suppression Pool Water Temperature (BWR NUREG-1433, ISTS Table 3.3.3.1-1, Function 13) are not incorporated in proposed JAFNPP ITS Table 3.3.3.1-1 (Function 10). This difference is consistent with current licensing requirements for Torus Bulk Water Temperature. All temperature sensors associated with a channel (irrespective of sensor location) are required to be OPERABLE for the channel to be OPERABLE except as indicated in "INSERT LCO-10".

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Editorial changes have been made for enhanced clarity or accuracy or to be consistent with other places in the Bases.

PA2 The Specification has been modified to reflect plant specific nomenclature.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA3 These phrases have been deleted since they were never intended to be retained in the plant specific ITS.

PA4 Reference to PAM Report has been revised to be consistent with the JAFNPP specific ITS numbering.

PA5 The quotations used in the Bases References have been removed. The Writer's Guide does not require the use of quotations.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 The Bases has been revised to reflect the plant specific channel description.

DB2 The SR 3.3.3.1.3 Frequency of 18 months has been changed to 24 months consistent with the requirements in CTS Table 4.2-8. This Frequency is adequate to ensure the channels remains Operable between surveillances and is consistent with the JAFNPP fuel cycle.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler number 295, Revision 0 have been incorporated into the revised Improved Technical Specifications.

RAI 3.3.3.1-3
TSTF 295 R0

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 NUREG-1433, Revision 1, Bases reference to "the NRC Policy Statement" has been replaced with 10 CFR 50.36(c)(2)(ii), in accordance with 60 FR 36953 effective August 18, 1995.

X2 Not Used.

RAI 3.3.3.1-3
TSTF 295 R0

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.3.3.1 - POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X3 The ISTS 3.3.3.1 Condition C Note and ACTION D, special Conditions for hydrogen monitor channels, have been deleted. The CTS requirements only require one Operable Primary Containment H_2 and O_2 monitor channel. Therefore operation is allowed at all times in the Applicable Modes with one of the two channels inoperable. With both channels inoperable, operation is allowed for 30 days as long as the parameter is monitored once each 24 hours or a grab sample is obtained. This requirement has been relocated to the Technical Requirements Manual to ensure the oxygen concentration is maintained within the limits of LCO 3.6.3.1 between Surveillance intervals. The deletion of ISTS 3.3.3.1 Condition C Note and ACTION D will allow a 7 day Completion Time to restore one oxygen and hydrogen monitor channels when both are inoperable, as shown in ITS 3.3.3.1 ACTION C. There is no difference, with respect to their importance during an accident, between the H_2 and O_2 channels and other PAM instrumentation. The requirement to monitor H_2 and O_2 concentration more frequently in the TRM will ensure the limits of oxygen are maintained within limits between the required Surveillances. Therefore, the discussion in the Bases for ACTION C has been revised to not include any reference to a Note, ACTION D has been deleted and the wording in the subsequent ACTION has been revised to reflect this deletion. In addition, the subsequent requirements have been renumbered, where applicable, to reflect this deletion.

X4 The details in the Bases of SR 3.3.3.1 on the specific method to perform the CHANNEL CHECK on high radiation equipment has been deleted since this SR is currently performed by comparing the two Containment High Range Radiation channels. In addition, appropriate methods for performing the CHANNEL CHECKS and CALIBRATIONS on PCIV indication channels have been included since the methods are different than the typical methods.

X5 The LCO Bases description for primary containment isolation valve position indication has been revised to reflect the Bases for allowing some penetrations to not have position indication. This modification is consistent with the details provided in footnote (a) of ITS Table 3.3.3.1-1. In addition, reference to Note (b) has been changed to footnote (b) to be consistent with other places in the Bases.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.1

Post Accident Monitoring (PAM) Instrumentation

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

3.3 INSTRUMENTATION

3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1-1 shall be OPERABLE.

---NOTE---
Function 8 may be inoperable for up to 3 hours per 24 hour period during Post Accident Sampling System operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

---NOTES---
1. LCO 3.0.4 is not applicable.

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.6.	Immediately
C. One or more Functions with two required channels inoperable.	C.1 Restore one required channel to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	E.1 Be in MODE 3.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	F.1 Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.3.1.1	Perform CHANNEL CHECK of each required PAM instrument channel.	31 days
SR 3.3.3.1.2	Perform CHANNEL CALIBRATION of each required PAM Primary Containment H_2 and O_2 Concentration Function channel.	92 days
SR 3.3.3.1.3	Perform CHANNEL CALIBRATION of each required PAM instrumentation channel except for the Primary Containment H_2 and O_2 Concentration Function channels.	24 months

Table 3.3.3.1-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1
1. Reactor Vessel Pressure	2	E
2. Reactor Vessel Water Level		
a. Fuel Zone	2	E
b. Wide Range	2	E
3. Suppression Pool Water Level (Wide Range)	2	E
4. Drywell Pressure		
a. Narrow Range	2	E
b. Wide Range	2	E
5. Containment High Range Radiation	2	F
6. Drywell Temperature	2	E
7. Penetration Flow Path PCIV Position	2 per penetration flow path [(a)(b)]	E
8. Primary Containment H_2 & O_2 Concentration	2	E
9. Suppression Chamber Pressure	2	E
10. Suppression Pool Water Temperature	2	E
11. Drywell Water Level	2	E

(a) Not required for isolation valves whose associated penetration flow path is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.

B 3.3 INSTRUMENTATION

B 3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

BASES

BACKGROUND

The primary purpose of the PAM instrumentation is to display plant variables that provide information required by the control room operators during accident situations. This information provides the necessary support for the operator to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for Design Basis Events. The instruments that monitor these variables are designated as Type A, Category 1, and non-Type A, Category 1, in accordance with Regulatory Guide 1.97 (Ref. 1).

The OPERABILITY of the accident monitoring instrumentation ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. This capability is consistent with the recommendations of Reference 1.

APPLICABLE SAFETY ANALYSES

The PAM instrumentation LCO ensures the OPERABILITY of Regulatory Guide 1.97, Type A variables so that the control room operating staff can:

- Perform the diagnosis specified in the Emergency Operating Procedures (EOPs). These variables are restricted to preplanned actions for the primary success path of Design Basis Accidents (DBAs), (e.g., loss of coolant accident (LOCA)), and
- Take the specified, preplanned, manually controlled actions for which no automatic control is provided, which are required for safety systems to accomplish their safety function.

The PAM instrumentation LCO also ensures OPERABILITY of Category 1, non-Type A, variables so that the control room operating staff can:

- Determine whether systems important to safety are performing their intended functions;

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

- Determine the potential for causing a gross breach of the barriers to radioactivity release;
- Determine whether a gross breach of a barrier has occurred; and
- Initiate action necessary to protect the public and for an estimate of the magnitude of any potential exposure.

The plant specific Regulatory Guide 1.97 Analysis (Ref. 2) documents the process that identified Type A and Category 1, non-Type A, variables.

Accident monitoring instrumentation that satisfies the definition of Type A in Regulatory Guide 1.97 meets Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 3). Category 1, non-Type A, instrumentation is retained in Technical Specifications (TS) because they are intended to assist operators in minimizing the consequences of accidents. Therefore, these Category 1 variables are important for reducing public risk.

LCO

LCO 3.3.3.1 requires two OPERABLE channels for all but one Function to ensure that no single failure prevents the operators from being presented with the information necessary to determine the status of the plant and to bring the plant to, and maintain it in, a safe condition following an accident. Furthermore, provision of two channels allows a CHANNEL CHECK during the post accident phase to confirm the validity of displayed information.

The exception to the two channel requirement is primary containment isolation valve (PCIV) position. In this case, the important information is the status of the primary containment penetrations. The LCO requires one position indicator for each active PCIV. This is sufficient to redundantly verify the isolation status of each isolable penetration either via indicated status of the active valve and prior knowledge of passive valve or via system boundary status. If a normally active PCIV is known to be closed and deactivated, position indication is not needed to determine status. Therefore, the position indication for valves in this state is not required to be OPERABLE.

(continued)

BASES

LCO (continued)

The following list is a discussion of the specified instrument Functions listed in Table 3.3.3.1-1 in the accompanying LCO.

1. Reactor Vessel Pressure

Reactor vessel pressure is a Category 1 variable provided to support monitoring of Reactor Coolant System (RCS) integrity and to verify operation of the Emergency Core Cooling Systems (ECCS). Two independent pressure transmitters with a range of 0 psig to 1500 psig monitor pressure and associated independent wide range recorders are the primaryindication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

2. Reactor Vessel Water Level

Reactor vessel water level is a Category 1 variable provided to support monitoring of core cooling and to verify operation of the ECCS. The reactor vessel water level channels provide the PAM Reactor Vessel Water Level Function. The reactor vessel water level channels cover a range from -150 inches (just below the bottom of the active fuel) to +224.5 inches, as referenced (zero) from the top of active fuel (TAF). Reactor vessel water level is measured in overlapping stages by separate independent differential pressure transmitters. Two reactor vessel water level (fuel zone) channels monitor the range from -150 inches to +200 inches (TAF). One fuel zone channel consists of a transmitter and indicator and the other channel consists of a transmitter and recorder. Two reactor vessel water level (wide range) channels monitor the range from +14.5 inches to +224.5 inches (TAF). The upper limit corresponds to a level of 63.5 inches below the centerline of the main steam lines. Likewise, one wide range channel consists of a transmitter and indicator and the other channel consists of a transmitter and recorder. These transmitters and associated indicators and recorders provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

RAI-

RAI-

(continued)

BASES

LCO

2. Reactor Vessel Water Level (continued)

The reactor vessel water level wide range instruments are uncompensated for variation in reactor water density and are calibrated to be most accurate at operational pressure and temperature. The fuel level instruments are calibrated for cold conditions.

RAI-3331-14

3. Suppression Pool Water Level (Wide Range)

Suppression pool water level is a Category 1 variable provided to detect a breach in the reactor coolant pressure boundary (RCPB). This variable is also used to verify and provide long term surveillance of ECCS function. The wide range suppression pool water level measurement provides the operator with sufficient information to assess the status of both the RCPB and the water supply to the ECCS. The wide range water level instruments have a range of 1.7 feet to 27.5 feet. Two wide range suppression pool water level signals are transmitted from separate differential pressure transmitters and are continuously monitored by two level indicators and recorded on two recorders in the control room. These transmitters, indicators and recorders provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

4. Drywell Pressure

Drywell pressure is a Category 1 variable provided to detect breach of the RCPB and to verify ECCS functions that operate to maintain RCS integrity. The drywell pressure channels cover a range of -5 psig to +250 psig. The drywell pressure is measured in overlapping stages by separate independent pressure transmitters. Two drywell pressure (narrow range) channels monitor the range from -5 psig to +5 psig. Two drywell pressure (wide range) channels monitor the range from 0 psig to 250 psig. Each drywell pressure channel consists of a separate independent transmitter with an associated indicator and recorder in the control room. These transmitters and associated indicators and recorders provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

(continued)

BASES

LCO
(continued)

5. Containment High Range Radiation

Containment high range radiation channels are provided to monitor the potential of significant releases of radioactive material and to provide release assessment for use by operators in determining the need to invoke site emergency plans. Two physically separated and redundant radiation detectors with a range of 1 R/hr to 10 E8 R/hr are located inside the drywell. The detectors provide a signal to separate process radiation monitors located in the control room. These radiation detectors and associated monitors provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

6. Drywell Temperature

Drywell temperature is a Category 1 variable provided to detect a breach in the RCPB and to verify ECCS functions that operate to maintain RCS integrity. Two drywell temperature channels monitor the range from 40°F to 440°F. Each drywell temperature channel consists of a separate temperature sensor, with an associated recorder in the control room. These temperature sensors and associated recorders provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

7. Primary Containment Isolation Valve (PCIV) Position

PCIV position is a Category 1 variable provided for verification of containment integrity. In the case of PCIV position, the important information is the isolation status of the containment penetration. Therefore, this Function is not required for isolation valves whose associated penetration flow path is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured (as noted in footnote (a) to Table 3.3.3.1-1). The LCO requires one channel of valve position indication in the control room to be OPERABLE for each active PCIV in a containment penetration flow path, i.e., two total channels of PCIV position indication for a penetration flow path with

(continued)

BASES

LCO

7. Primary Containment Isolation Valve (PCIV) Position (continued)

two active valves. For containment penetrations with only one active PCIV having control room indication, Note (b) requires a single channel of valve position indication to be OPERABLE. This is sufficient to redundantly verify the isolation status of each isolable penetration via indicated status of the active valve, as applicable, and prior knowledge of passive valve or system boundary status. If a penetration flow path is isolated, position indication for the PCIV(s) in the associated penetration flow path is not needed to determine status. Therefore, the position indication for valves in an isolated penetration flow path is not required to be OPERABLE. Each penetration is treated separately and each penetration flow path is considered a separate Function. Therefore, separate Condition entry is allowed for each inoperable penetration flow path.

RAI-3.3.3.1-3

The PCIV position PAM instrumentation consists of position switches mounted on the valves for the positions to be indicated, associated wiring and control room indicating lamps for active PCIVs (check valves and manual valves are not required to have position indication). These position switches and associated indicators in the control room provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

8. Primary Containment Hydrogen and Oxygen Concentration

Primary containment hydrogen and oxygen concentration is a Category 1 variable provided to detect high hydrogen or oxygen concentration conditions that represent a potential for containment breach. This variable is also important in verifying the adequacy of mitigating actions. The primary containment hydrogen and oxygen concentration channels consists of two redundant analyzers. Each analyzer contains a hydrogen and an oxygen detector. Each analyzer can be aligned to sample air from one of four sample points (3 points in the drywell and 1 point in the suppression chamber). Sample air passes through the Hydrogen Analyzer and the Oxygen Analyzer and is returned to the suppression chamber air space. During normal operation, the Division I

(continued)

BASES

LCO

8. Primary Containment Hydrogen and Oxygen Concentration (continued)

analyzer samples the suppression chamber and the Division II analyzer samples the drywell. The analyzers are capable of determining oxygen concentration in the range of 0 to 25% and hydrogen concentration in the range of 0 to 30%, which meets the requirements of Reference 1. The hydrogen and oxygen concentration from each analyzer may be displayed on its associated recorder in the relay room. Therefore, the PAM Specification deals specifically with these portions of the instrument channel. A Note allows the primary containment hydrogen and oxygen concentration channels to be inoperable for up to 3 hours per 24 hour period during Post Accident Sampling System (PASS) operation. PASS operation includes realignment from or to the mode. Operation of the PASS may require isolation of the primary containment hydrogen and oxygen concentration channels. This allowance will ensure that the PASS can perform its post accident monitoring function (Ref. 4) while minimizing the time the primary containment hydrogen and oxygen concentration channels are isolated.

PAI-3.3.3.1-1

9. Suppression Chamber Pressure

Suppression chamber pressure is a Category 1 variable provided to verify RCS and containment integrity and to verify the effectiveness of ECCS actions taken to prevent containment breach. Two suppression chamber channels monitor a range from -15 psig to +85 psig. Each channel consists of an independent transmitter and associated recorder in the control room. These transmitters and recorders provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

10. Suppression Pool Water Temperature

Suppression pool water temperature is a Category 1 variable provided to detect a condition that could potentially lead to containment breach and to verify the effectiveness of ECCS actions taken to prevent containment breach. The suppression pool water temperature instrumentation allows operators to detect trends in suppression pool water temperature. The suppression pool water temperature is monitored by two redundant channels. Each channel consists of sixteen resistance temperature detectors (RTDs) that

(continued)

BASES

LCO

10. Suppression Pool Water Temperature
(continued)

monitor temperature over a range of 30°F to 230°F. The RTDs are mounted in thermowells spaced at equal intervals around the periphery of the suppression pool. The sixteen RTD signals are averaged and the resulting bulk temperature signal is sent to redundant indicating recorders in the control room. A minimum of fifteen out of sixteen RTDs are required for channel operability. An evaluation (Ref. 5) demonstrates that the maximum error in suppression pool bulk temperature measurement including channel uncertainty is < 4°F with active pool circulation. Thus a 4°F bias has been employed for conservatism. By specifying 15 RTDs the single failure criteria is accounted for. This evaluation conservatively assumed the failure of RTDs at locations that minimized indicated bulk suppression pool temperature and consequently maximized indicated error. These RTDs and recorders provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channels.

11. Drywell Water Level

Drywell Water Level is a Category 1 variable provided to detect whether plant safety functions are being accomplished. Two drywell water level channels monitor the range from 22 feet to 106 feet. Each drywell water level channel consists of level transmitters, with an associatedindicator and recorder in the control room. These level transmitters and associated indicators and recorders provide the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with these portions of the instrument channel.

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1 and 2. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1 and 2. In MODES 3, 4, and 5, plant conditions are such that the likelihood of an event that would require PAM instrumentation is extremely low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

(continued)

BASES

ACTIONS

Note 1 has been added to the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to diagnose an accident using alternative instruments and methods, and the low probability of an event requiring these instruments.

Note 2 has been provided to modify the ACTIONS related to PAM instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additionalfailure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable PAM instrumentation channels provide appropriate compensatory measures for separate Functions. As such, a Note has been provided that allows separate Condition entry for each inoperable PAM Function.

A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channels (or, in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is initiated by these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

B.1

If a channel has not been restored to OPERABLE status in 30 days, this Required Action specifies initiation of action in accordance with Specification 5.6.6, which requires a written report to be submitted to the NRC. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown

(continued)

BASES

ACTIONS

B.1 (continued)

requirement, since alternative actions are identified before loss of functional capability, and given the low probability of an event that would require information provided by this instrumentation.

C.1

When one or more Functions have two required channels that are inoperable (i.e., two channels inoperable in the same Function), one channel in the Function should be restored to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur.

D.1

This Required Action directs entry into the appropriate Condition referenced in Table 3.3.3.1-1. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met the Required Action of Condition C and the associated Completion Time has expired, Condition D is entered for that channel and provides for transfer to the appropriate subsequent Condition.

E.1

For the majority of Functions in Table 3.3.3.1-1, if any Required Action and associated Completion Time of Condition C is not met, the plant must be brought to a MODE in which the LCO not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES

ACTIONS (continued)

F.1

Since alternate means of monitoring primary containment area radiation have been developed and tested, the Required Action is not to shut down the plant, but rather to follow the directions of Specification 5.6.6. These alternate means may be temporarily installed if the normal PAM channel cannot be restored to OPERABLE status within the allotted time. The report provided to the NRC should discuss the alternate means used, describe the degree to which the alternate means are equivalent to the installed PAM channels, justify the areas in which they are not equivalent, and provide a schedule for restoring the normal PAM channels.

SURVEILLANCE REQUIREMENTS

SR 3.3.3.1.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel against a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION. For the PCIV Position Function, the CHANNEL CHECK consists of verifying the remote indication conforms to expected valve position.

Channel agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including isolation, indication, and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

The Frequency of 31 days is based upon plant operating experience, with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 31 day interval is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of those displays associated with the channels required by the LCO.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.3.1.2 and SR 3.3.3.1.3

These SRs require a CHANNEL CALIBRATION to be performed. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies the channel responds to measured parameter with the necessary range and accuracy. For PCIV Position Function, the CHANNEL CALIBRATION consists of verifying the remote indication conforms to actual valve position.

The 92 day Frequency for CHANNEL CALIBRATION of the Primary Containment Hydrogen and Oxygen Concentration channels is based on vendor recommendations. The 24 month Frequency for CHANNEL CALIBRATION of all other PAM instrumentation of Table 3.3.3.1-1 is based on operating experience and consistency with the typical industry refueling cycles.

REFERENCES

1. Regulatory Guide 1.97, Revision 3, Instrumentation For Light-Water-Cooled Nuclear Power Plants To Assess Plant And Environs Conditions During And Following An Accident, May 1983.

2. NRC letter, H. I. Abelson to J. C. Brons dated March 14, 1988, regarding conformance to Regulatory Guide 1.97, Rev. 2. Includes NRR Safety Evaluation Report for Regulatory Guide 1.97 and James A. FitzPatrick Nuclear Power Plant.

3. 10 CFR 50.36(c)(2)(ii).

4. UFSAR, Section 9.14.4.

5. DRF-T23-6681-1, Error in FitzPatrick Temperature Measurement Based on Monticello In-plant S/RV Test Data.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.2

Remote Shutdown System

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

DISCUSSION OF CHANGES (DOCs) TO THE CTS

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

MARKUP OF NUREG-1433, REVISION 1, SPECIFICATION

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1

MARKUP OF NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1, BASES

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.2

Remote Shutdown System

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

Specification 3.3.3.2

(AT)

~~3.2 (cont'd)~~ ~~4.2 (cont'd)~~

[3.3.3.2] ~~J.~~ ~~Remote Shutdown Capability~~ (System) [3.3.3.2] ~~J.~~ ~~Remote Shutdown Capability~~ (System)

[LCO 3.3.3.2.1] 1. The remote shutdown instrument and control circuits in Table 3.2-10 shall be operable in the ~~Run and Startup/Hot~~ [APPLICABILITY] ~~Standby modes.~~ MODES 1 and 2 (M1)

[SR 3.3.3.2.1] [SR 3.3.3.2.2] [SR 3.3.3.2.3] Instruments and controls shall be tested and calibrated as indicated in Table 3.2-10.

ACTION A

2. With one or more required instrument circuits inoperable:

   a. restore the required instrument circuit to operable status within 30 days, or

   b. establish an alternate method of monitoring the parameter within 30 days and restore the required instrument circuit to operable status within 90 days, or (M3)

add proposed Note 2 to ACTIONS (A2)

[ACTION B]

   c. be in hot shutdown within the next 12 hours.

ACTION A

3. With one or more required control circuits inoperable:

   a. place the component actuated by that control circuit in the safe shutdown configuration, or (M3)

   b. restore the required control circuit to operable status within 30 days, or

[ACTION B]

   c. be in hot shutdown within the next 12 hours.

4. Specification 3.2.J does not apply if the component actuated by a required control circuit is inoperable. (M2)

[Note 1 to ACTIONS] 5. The provisions of Specification ~~3.0.D~~ 3.0.4 are not applicable.

RAI 3.3.3.2-2

RAI 3.3.3.2-1

Specification 3.3.3.2 (A1)

TABLE 3.2-10

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

(A4)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1]	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
1.	RHR Service Water Flow (Loop B) (10FI-134)	25RSP	M - 1	R - 3	NA
2.	RHR Service Water Pump Control (10P-1B)	25RSP	NA	NA	R - 2
3.	RHR Service Water Heat Exchanger Outlet Valve Control (10MOV-89B)	25RSP	NA	NA	R - 2
4.	RHR Service Water to RHR Cross-Tie Valve Control (10MOV-148B)	25ASP-1 (LA2)	NA	NA	R - 2
5.	RHR Service Water to RHR Cross-Tie Valve Control (10MOV-149B)	25ASP-1	NA	NA	R - 2
6.	RHR Flow (Loop B) (10FI-133)	25RSP	M - 1	R - 3	NA
7.	RHR Discharge Pressure (Pump D) (10PI-279)	25RSP	M - 1	R - 3	NA
8.	RHR Pump Control (10P-3D)	25RSP	NA	NA	R - 2
9.	RHR Heat Exchanger Bypass Valve Control (10MOV-66B)	25RSP	NA	NA	R - 2

Specification 3.3.3.2 A1

TABLE 3.2-10 (cont'd) LA2

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	~~INSTRUMENT CHECK~~	~~INSTRUMENT CALIBRATION~~	FUNCTIONAL TEST (SR 3.3.3.2.2) L2
10.	RHR Inboard Injection Valve Control (10MOV-25B)	25RSP	~~NA~~	~~NA~~	R - Z
11.	RHR Heat Exchanger Steam Inlet Valve Control (10MOV-70B)	25ASP-1	~~NA~~	~~NA~~	R - Z
12.	RHR Heat Exchanger Vent Valve Control (10MOV-166B)	25ASP-1	~~NA~~	~~NA~~	R - Z
13.	RHR Heat Exchanger Outlet Valve Control (10MOV-12B)	25ASP-1	~~NA~~	~~NA~~	R - Z
14.	RHR Pump D Torus Suction Valve Control (10MOV-13D)	25ASP-2	~~NA~~	~~NA~~	R - Z
15.	RHR Pump D Shutdown Cooling Suction Valve Control (10MOV-15D)	25ASP-2	~~NA~~	~~NA~~	R - Z
16.	RHR Pump B Minimum Flow Valve Control (10MOV-16B)	25ASP-2	~~NA~~	~~NA~~	R - Z
17.	RHR Heat Exchanger Inlet Valve Control (10MOV-65B)	25ASP-2	~~NA~~	~~NA~~	R - Z
18.	RHR Outboard Injection Valve Control (10MOV-27B)	25ASP-2	~~NA~~	~~NA~~	R - Z

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	~~INSTRUMENT CHECK~~	~~INSTRUMENT CALIBRATION~~	FUNCTIONAL TEST (SR 3.3.3.2.2) (L2)
19.	RHR Heat Exchanger Discharge to Torus Valve Control (10MOV-21B)	25ASP-2	~~NA~~	~~NA~~	R – 2
20.	Torus Cooling Isolation Valve Control (10MOV-39B)	25ASP-2	~~NA~~	~~NA~~	R – 2
21.	DW Spray Outboard Valve Control (10MOV-26B)	25ASP-3	~~NA~~	~~NA~~	R – 2
22.	ADS & Safety Relief Valve A Control (02RV-71A)	02ADS-71	~~NA~~	~~NA~~	R – 2
23.	ADS & Safety Relief Valve B Control (02RV-71B)	02ADS-71	~~NA~~	~~NA~~	R – 2
24.	ADS & Safety Relief Valve C Control (02RV-71C)	02ADS-71	~~NA~~	~~NA~~	R – 2
25.	ADS & Safety Relief Valve D Control (02RV-71D)	02ADS-71	~~NA~~	~~NA~~	R – 2
26.	ADS & Safety Relief Valve E Control (02RV-71E)	02ADS-71	~~NA~~	~~NA~~	R – 2
27.	ADS & Safety Relief Valve G Control (02RV-71G)	02ADS-71	~~NA~~	~~NA~~	R – 2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (Cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

[Refer to Notes on Page 77o]

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1] (A4)	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
28.	ADS & Safety Relief Valve H Control (02RV-71H)	02ADS-71	NA	NA	R – 2
29.	Safety Relief Valve F Control (02RV-71F)	02ADS-71	NA	NA	R – 2
30.	Safety Relief Valve J Control (02RV-71J)	02ADS-71	NA	NA	R – 2
31.	Safety Relief Valve K Control (02RV-71K)	02ADS-71	NA	NA	R – 2
32.	Safety Relief Valve L Control (02RV-71L)	02ADS-71	NA	NA	R – 2
33.	Main Steam Line Drain Outboard Isolation Valve Control (29MOV-77)	25ASP-2	NA	NA	R – 2
34.	Drywell Temperature (68TI-115)	25RSP	M – 1	R – 3	NA
35.	Torus Water Temperature (27TI-101)	25RSP	M – 1	R – 3	NA
36.	Torus Water Level (23LI-204)	25RSP	M – 1	R – 3	NA

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1] (A4)	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
37.	Reactor Vessel Pressure (02-3PI-60B)	Rack 25-6	M—1	R	NA
38.	Reactor Vessel Water Level (02-3LI-58A)	Rack 25-6	M—1	R	NA
39.	Reactor Vessel Water Level (02-3LI-93)	Rack 25-51	M—1	R	NA
40.	HPCI Steam Supply Outboard Isolation Valve Control (23MOV-16)	25RSP	NA—1	NA	R—2
41.	HPCI Outboard Isolation Bypass Valve Control (23MOV-60)	25ASP-2	NA	NA	R-2
42.	HPCI Minimum Flow Valve Control (23MOV-25)	25ASP-2	NA	NA	R-2
43.	CAD B Train Inlet Valve Control (27AOV-126B)	25RSP	NA	NA	R-2
44.	Nitrogen Instrument Header Isolation Valve Control (27AOV-129B)	25RSP	NA	NA	R-2
45.	Reactor Water Cleanup Outboard Isolation Valve Control (12MOV-18)	25ASP-2	NA	NA	R-2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

(LA2)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	~~INSTRUMENT CHECK~~	~~INSTRUMENT CALIBRATION~~	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
46.	Emergency Service Water Pump B Control (46P-2B)	25ASP-3	NA	NA	R-2
47.	ESW Loop B Supply Header Isolation Valve Control (46MOV-101B)	25ASP-3	NA	NA	R-2
48.	ESW Pump B Test Valve Control (46MOV-102B)	25ASP-3	NA	NA	R-2
49.	Bus 11600 Supply Breaker Control (71-11602)	25RSP	NA	NA	R-2
50.	EDG B & EDG D Tie Breaker Control (71-10604)	25ASP-3	NA	NA	R-2
51.	Bus 10400-10600 Tie Breaker Control (71-10614)	25ASP-3	NA	NA	R-2
52.	Unit Substation L16 & L26 Feeder Breaker Control (71-10660)	25ASP-3	NA	NA	R-2
53.	Bus 12600 Supply Breaker Control (71-12602)	25ASP-3	NA	NA	R-2
54.	Breaker 71-10614 Synchronizing Check Control	25ASP-3	NA	NA	R-2
55.	EDG B Control Room Metering Check Control	25ASP-3	NA	NA	R-2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS (LA2)

(Refer to Notes on Page 77a)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1]	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
56.	EDG B Engine Start/Stop Control	25ASP-3	NA (A4)	NA	R-2
57.	EDG D Control Room Metering Check Control	25ASP-3	NA	NA	R-2
58.	EDG D Engine Start/Stop Control	25ASP-3	NA	NA	R-2
59.	EDG B Governor Switch	93EGP-B	NA	NA	R-2
60.	EDG B Synchronizing Switch	93EGP-B	NA	NA	R-2
61.	EDG B Load Breaker Control (71-10602)	93EGP-B	NA	NA	R-2
62.	EDG B Motor Control	93EGP-B	NA	NA	R-2
63.	EDG B Frequency Meter (93FM-1B)	93EGP-B	NA	R-3	NA
64.	EDG B Voltage Control	93EGP-B	NA	NA	R-2
65.	EDG B Emergency Bus Meter (71VM-600-1B)	93EGP-B	M-1	R-3	NA
66.	EDG B Incoming Bus Meter (93VM-12B)	93EGP-B	NA	R-3	NA
67.	EDG B Running Bus Meter (93VM-11B)	93EGP-B	NA	R-3	NA
68.	EDG D Governor Switch	93EGP-D	NA	NA	R-2
69.	EDG D Synchronizing Switch	93EGP-D	NA	NA	R-2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (A2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	INSTRUMENT CHECK [SR 3.3.3.2.1] (A4)	INSTRUMENT CALIBRATION [SR 3.3.3.2.3]	FUNCTIONAL TEST [SR 3.3.3.2.2] (L2)
70.	EDG D Load Breaker Control (71-10612)	93EGP-D	NA	NA	R-2
71.	EDG D Motor Control	93EGP-D	NA	NA	R-2
72.	EDG D Frequency Meter (93FM-1D)	93EGP-D	NA	R-3	NA
73.	EDG D Voltage Control	93EGP-D	NA	NA	R-2
74.	EDG D Emergency Bus Meter (71VM-600-1D)	93EGP-D	M	R-3	NA
75.	EDG D Incoming Bus Meter (93VM-12D)	93EGP-D	NA	R-3	NA
76.	EDG D Running Bus Meter (93VM-11D)	93EGP-D	NA	R-3	NA
77.	Reactor Head Vent Isolation Switch (02AOV-17)	25RSP	NA	NA	R-2
78.	Outboard MSIV A Isolation Switch (29AOV-86A)	25ASP-4	NA	NA	R-2
79.	Outboard MSIV B Isolation Switch (29AOV-86B)	25ASP-4	NA	NA	R-2
80.	Outboard MSIV C Isolation Switch (29AOV-86C)	25ASP-4	NA	NA	R-2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

(Refer to Notes on Page 77o)

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	~~INSTRUMENT CHECK~~	~~INSTRUMENT CALIBRATION~~	FUNCTIONAL TEST (LZ) LSR 3.3.3.2.2
81.	Outboard MSIV D Isolation Switch (29AOV-86D)	25ASP-4	NA	NA	R-2
82.	East Crescent Area Unit Cooler B,D,F (66UC-22B, 22D, 22F) Isolation Switch	66HV-3B	NA	NA	R-2
83.	East Crescent Area Unit Cooler H,K (66UC-22H, 22K) Isolation Switch	66HV-3B	NA	NA	R-2
84.	ADS & Safety Relief Valve A Isolation Switch (02RV-71A)	25ASP-5	NA	NA	R-2
85.	ADS & Safety Relief Valve B Isolation Switch (02RV-71B)	25ASP-5	NA	NA	R-2
86.	ADS & Safety Relief Valve C Isolation Switch (02RV-71C)	25ASP-5	NA	NA	R-2
87.	ADS & Safety Relief Valve D Isolation Switch (02RV-71D)	25ASP-5	NA	NA	R-2
88.	ADS & Safety Relief Valve E Isolation Switch (02RV-71E)	25ASP-5	NA	NA	R-2
89.	Safety Relief Valve F Isolation Switch (02RV-71F)	25ASP-5	NA	NA	R-2

Specification 3.3.3.2 (A1)

TABLE 3.2-10 (cont'd) (LA2)

REMOTE SHUTDOWN CAPABILITY INSTRUMENTATION AND CONTROLS

	INSTRUMENT OR CONTROL	PANEL OR LOCATION	~~INSTRUMENT CHECK~~	~~INSTRUMENT CALIBRATION~~	FUNCTIONAL TEST [SR 3.3.3.2.2] (LZ)
90.	ADS & Safety Relief Valve G Isolation Switch (02RV-71G)	25ASP-5	NA	NA	R – 2
91.	ADS & Safety Relief Valve H Isolation Switch (02RV-71H)	25ASP-5	NA	NA	R – 2
92.	Safety Relief Valve J Isolation Switch (02RV-71J)	25ASP-5	NA	NA	R – 2
93.	Safety Relief Valve K Isolation Switch (02RV-71K)	25ASP-5	NA	NA	R – 2
94.	Safety Relief Valve L Isolation Switch (02RV-71L)	25ASP-5	NA	NA	R – 2

NOTES FOR TABLE 3.2-10

1. Minimum required number of divisions for all instruments and controls listed is 1. (LA2)

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.2

Remote Shutdown System

DISCUSSION OF CHANGES (DOCs) TO THE CTS

DISCUSSION OF CHANGES
ITS: 3.3.3.2 - REMOTE SHUTDOWN SYSTEM

ADMINISTRATIVE CHANGES

A1 In the conversion of the James A. FitzPatrick Nuclear Power Plant (JAFNPP) Current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted that do not result in technical changes. Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the conventions in NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4", Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

A2 A Note has been added to the Required Actions of CST 3.2.J. This Note (ITS 3.3.3.2 ACTIONS Note 2) provides more explicit instructions for proper application of the ACTIONS for Technical Specification compliance. In conjunction with the proposed Specification 1.3, "Completion Times," the ACTIONS Note ("Separate Condition entry is allowed for each....") and the wording for ACTION A ("one or more required Functions") provides direction consistent with the intent of the existing ACTION for an inoperable remote shutdown instrumentation channel. Since this change only provides more explicit direction of the current interpretation of the CTS, this change is considered administrative.

A3 Not Used.

A4 CTS Table 3.2-10 requires the monthly performance of a channel check on all the required instrument channels (not control switches). ITS SR 3.3.3.2.1 will require a CHANNEL CHECK every 31 days for each required instrument channel that is normally energized. No specific acceptance criteria would apply to the CHANNEL CHECK if an instrument channel were de-energized (since the instruments would not be indicating), therefore, this Surveillance Requirement is modified to exclude the CHANNEL CHECK requirement on de-energized channels. This change in presentation is considered administrative since the existing channels at JAFNPP are either energized or are directly reading the parameter and a CHANNEL CHECK will still be required every 31 days.

RMT 3.3.3.2-1

DISCUSSION OF CHANGES
ITS: 3.3.3.2 - REMOTE SHUTDOWN SYSTEM

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 The CTS Applicability in CTS 3.2.J is "Run and Startup/Hot Standby" modes. The ITS 3.3.3.2 Applicability is MODES 1 and 2. The current definition of Hot Standby as defined in CTS 1.0.D includes operation with coolant temperature > 212°F, the Mode Switch in Startup/Hot Standby and reactor pressure < 1040 psig. The new definition of MODE 2 includes any temperature of the reactor coolant and the Reactor Mode Switch in Startup or Refuel position. Therefore any time the reactor is critical or there is an intent or potential for the reactor to become critical the Remote Shutdown equipment must be OPERABLE. Since the Applicability of the Remote Shutdown equipment has been extended this change is more restrictive but safer for plant operation.

M2 CTS 3.2.J.5 provides an allowance that the requirements of CTS 3.2.J (the Remote Shutdown instrument and control circuit LCO) do not apply if the component actuated by a required control circuit is inoperable. This explicit allowance is not included in ITS 3.3.3.2 and is being deleted. If operating in MODES 1 and 2, all of the controls appearing in CTS Table 3.2-10 (or in the Technical Requirements Manual after implementation) must be Operable to support equipment that has been tested in accordance with its associated Surveillance Requirements (e.g., in most cases Technical Specification SRs) and is also considered Operable. If this is not the case, then the specified control will not be able to support the required safe shutdown safety functions defined in the Bases of ITS 3.3.3.2. If a component actuated by a required Remote Shutdown Circuit is inoperable and the other Technical Specifications allow continuous operation without this component (e.g., Safety/Relief Valves), then this component should be restored to Operable status within 30 days since the Remote Shutdown safe shutdown requirements may not be met. In most cases, the Completion Times of other Specifications (e.g., ITS 3.5.1, ECCS) will govern the allowed out of service time when required mechanical or electrical equipment are inoperable, since the times provided in the other Specifications are normally more restrictive. This change is more restrictive but necessary to ensure the plant can be brought to a safe shutdown condition from outside the control room.

M3 With one or more required remote shutdown instrumentation circuits inoperable, CTS 3.2.J.2.b provides an option to establish an alternate method of monitoring the parameter within 30 days and to restore the required instrument circuit to operable status wihin 90 days. With one or more required control circuits inoperable, CTS 3.2.J.3.b provides an option to place the component actuated by that control circuit in the safe shutdown configuration. These options have been deleted and the allowances in CTS 3.2.J.2.a and CTS 3.2.J.3.b to restore the required

RAI 3.3.3.1-1

TECHNICAL CHANGES - MORE RESTRICTIVE

M3 (continued)

instrument or control circuit to operable status within 30 days have been incorporated in proposed ITS 3.3.3.2 Required Action A.1. The 30 day Completion Time in the current and proposed Specification is sufficient to restore the required channel to Operable status. Since the option has been deleted this change is considered more restrictive.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 Not Used.

LA2 Details in CTS Table 3.2-10 relating to the Instrument or Control Functions of the Remote Shutdown System (including number of channels and divisions) are unnecessary in the LCO and are proposed to be relocated to the Technical Requirements Manual (TRM). ITS 3.3.3.2 requires the Remote Shutdown System Functions to be OPERABLE. The details for system Operability are not necessary to ensure the Remote Shutdown System is Operable. The requirements of ITS 3.3.3.2 which requires the Remote Shutdown System Functions to be OPERABLE, the Surveillances, and the definition of OPERABILITY suffice. The Bases describes the safety functions which must be met by the Remote Shutdown System Instrumentation and also identifies that the instruments are listed in the Technical Requirements Manual. This change is consistent with guidelines in Generic Letter 91-08 (Removal of Component Lists From Technical Specifications), May 6, 1991, for removal of component lists from Technical Specifications. The TRM will be revised, such that the component lists are updated promptly after any approved safety evaluation which results in any modifications to the listing to ensure compliance with ITS 3.3.3.2 at all times. The removal of this list from the Technical Specifications into the TRM has been recently approved for the Washington Public Power Supply System (WNP2), Nine Mile Point Unit 2, and LaSalle County Station Units 1 and 2, on the same basis. As such, these details are not required to be in the ITS to provide adequate protection of public health and safety. At ITS implementation, the relocated requirements in the TRM will be incorporated by reference into the UFSAR. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 Not Used.

DISCUSSION OF CHANGES
ITS: 3.3.3.2 - REMOTE SHUTDOWN SYSTEM

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L2 The requirement in CTS 4.2.J and Table 3.2-10 to perform a Functional Test is proposed to be changed to the requirements in ITS SR 3.3.3.2 to verify each required Remote Shutdown System transfer switch and control switch performs the intended function. This change includes changing the manner of performance of this SR from operating each actuated component from the associated control panel (e.g., Remote Shutdown Panel) to allowing performance of a continuity check to confirm Operability.

A continuity check is considered to be adequate to ensure that each transfer switch and control circuit performs its intended function. Direct cycling of switches and actuation of components can result in unnecessary wear and tear on vital plant components. Performance of continuity checks ensures that the required Remote Shutdown System Functions remain Operable without necessitating component actuation.

TECHNICAL CHANGES - RELOCATIONS

None

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.2

Remote Shutdown System

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.3.2 - REMOTE SHUTDOWN SYSTEM

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

RAI 3.3.2.2-2

L1 CHANGE

Not Used.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.3.2 - REMOTE SHUTDOWN SYSTEM

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L2 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   This change includes changing the manner of performance of this SR from operating each component from the associated panel to allowing performance of a continuity check. Direct cycling of switches and actuation of components can result in unnecessary wear and tear on vital plant components. Therefore, a continuity check is considered to be adequate to ensure that each transfer switch and control circuit performs its intended function. The affected instruments are not considered to be initiators of any accident previously analyzed. Performance of a continuity check instead of confirming operation of actuated components will not affect the capability of the system to perform its intended functions. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. Therefore, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   Direct cycling of switches and actuation of components can result in unnecessary wear and tear on vital plant components. Therefore, a continuity check is considered adequate to ensure that each transfer switch and control circuit performs its intended function. This change does not involve a significant reduction in a margin of safety since the Functions of the REMOTE SHUTDOWN SYSTEM Panel are verified to be Operable, by a method that maximizes the reliability of switches and actuated components. Therefore, this change does not involve a significant reduction in a margin of safety.

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.2

Remote Shutdown System

MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION

3.3 INSTRUMENTATION

3.3.3.2 Remote Shutdown System

[3.2.5.1] LCO 3.3.3.2 The Remote Shutdown System Functions in Table 3.3.3.2-1 (X1) shall be OPERABLE.

[3.2.5.1] APPLICABILITY: MODES 1 and 2.

ACTIONS

----------NOTES----------

[3.2.5.5] 1. LCO 3.0.4 is not applicable.

[A2] 2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable. [3.2.5 2.a] [3.2.5 3.b]	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met. [3.2.5.2.c] [3.2.5.3.c]	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
[Table 3.2-10] SR 3.3.3.2.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days (CLB2)

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY
[Table 3.3-10]	SR 3.3.3.2.2	Verify each required control circuit and transfer switch is capable of performing the intended function.	[18] 24 months
[Table 3.3-10]	SR 3.3.3.2.3	Perform CHANNEL CALIBRATION for each required instrumentation channel.	[18] 24 months

CLB1

X1

Table 3.3.3.2-1 (page 1 of 1)
Remote Shutdown System Instrumentation

FUNCTION (INSTRUMENT OR CONTROL PARAMETER)	REQUIRED NUMBER OF DIVISIONS
1. Reactor Pressure Vessel Pressure	
a. Reactor Pressure	[1]
2. Decay Heat Removal	
a. RCIC Flow	[1]
b. RCIC Controls	[1]
c. RHR Flow	[1]
d. RHR Controls	[1]
3. Reactor Pressure Vessel Inventory Control	
a. RCIC Flow	[1]
b. RCIC Controls	[1]
c. RHR Flow	[1]
d. RHR Controls	[1]

Reviewer Note: This Table is for illustration purposes only. It does not attempt to encompass every Function used at every plant, but does contain the types of Functions commonly found.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.2

Remote Shutdown System

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.3.3.2 - REMOTE SHUTDOWN SYSTEM

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 The SR Frequency of SR 3.3.3.2.2 and SR 3.3.3.2.3 have been modified from 18 months to 24 months, which is consistent with CTS Table 3.2-10. The Bases provides sufficient justification for this Frequency.

CLB2 ISTS SR 3.3.3.2.1 has been retained in the ITS since the CHANNEL CHECKS can be performed and is consistent with the current requirements in CTS Table 3.2-10.

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 The brackets have been removed and the proper plant specific value/nomenclature has been provided.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

None

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 The Remote Shutdown Table (Table 3.3.3.2-1) has been relocated to the Technical Requirements Manual. This change is consistent with the provisions of Generic Letter 91-08 for the removal of lists and has been recently approved for Washington Public Power Supply System (WNP2), Nine Mile Point Unit 2, and LaSalle County Station Units 1 and 2, on that basis.

RAI 3.3.3.2-2

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.2

Remote Shutdown System

MARKUP OF NUREG-1433, REVISION 1, BASES

B 3.3 INSTRUMENTATION

B 3.3.3.2 Remote Shutdown System

DBI all changes except as indicated

INSERT BKGD-2

BASES

BACKGROUND

The Remote Shutdown System provides the control room operator with sufficient instrumentation and controls to place and maintain the plant in a safe shutdown condition from a location other than the control room. This capability is necessary to protect against the possibility of the control room becoming inaccessible. A safe shutdown condition is defined as MODE 3. With the plant in MODE 3, the Reactor Core Isolation Cooling (RCIC) System, the safety/relief valves, and the Residual Heat Removal Shutdown Cooling System can be used to remove core decay heat and meet all safety requirements. The long term supply of water for the RCIC and the ability to operate shutdown cooling from outside the control room allow extended operation in MODE 3.

INSERT BKGD-1

INSERT BKGD-3

INSERT BKGD-4

In the event that the control room becomes inaccessible, the operators can establish control at the remote shutdown panel and place and maintain the plant in MODE 3. Not all controls and necessary transfer switches are located at the remote shutdown panel. Some controls and transfer switches will have to be operated locally at the switchgear, motor control panels, or other local stations. The plant automatically reaches MODE 3 following a plant shutdown and can be maintained safely in MODE 3 for an extended period of time.

INSERT BKGD-5

The OPERABILITY of the Remote Shutdown System control and instrumentation Functions ensures that there is sufficient information available on selected plant parameters to place and maintain the plant in MODE 3 should the control room become inaccessible.

INSERT BKGD-6

APPLICABLE SAFETY ANALYSES

The Remote Shutdown System is required to provide equipment at appropriate locations outside the control room with a design capability to promptly shut down the reactor and maintain it in MODE 3, including the necessary instrumentation and controls, to maintain the plant in a safe condition in MODE 3.

(continued)

INSERT BKGD-1 (DBI)

, relay room, control room equipment room, cable spreading room, north cable run room, or battery room corridor

INSERT BKDG-2 (DBI)

due to a fire. All of these locations contain equipment necessary to achieve safe shutdown from the control room.

INSERT BKGD-3 (DBI)

This is accomplished by depressurizing the reactor pressure vessel (RPV) with the use of seven S/RVs and establishing a long term cooling path. Water is pumped from the suppression pool by an RHR pump, through an RHR heat exchanger and to the RPV via the low pressure coolant injection (LPCI) pathway. As reactor water level increases and the main steam lines become flooded, water is recirculated to the suppression pool through the S/RV discharge piping. The long term supply of water from the suppression pool and the ability to operate the RHR System in this closed loop configuration from outside the control room allows operation in a safe shutdown condition for an extended period of time.

INSERT BKGD-4 (DBI)

, relay room, control room equipment room, cable spreading room, north cable run room, or battery room corridor

INSERT BKGD-5 (DBI)

Other major controls are located at the Automatic Depressurization System (ADS) panel and auxiliary shutdown panels.

INSERT BKGD-6 (DBI)

, relay room, control room equipment room, cable spreading room, north cable run room, or battery room corridor

BASES

APPLICABLE SAFETY ANALYSES (continued)

The criteria governing the design and the specific system requirements of the Remote Shutdown System are located in 10 CFR 50, Appendix A, GDC 19 (Ref. 1).

The Remote Shutdown System is considered an important contributor to reducing the risk of accidents; as such, it has been retained in the Technical Specifications (TS) as indicated in the NRC Policy Statement.

LCO

The Remote Shutdown System LCO provides the requirements for the OPERABILITY of the instrumentation and controls necessary to place and maintain the plant in MODE 3 from a location other than the control room. The instrumentation and controls typically required are listed in Table 3.3.3.2-1 in the accompanying LCO.

> Reviewer's Note: For channels that fulfill GDC 19 requirements, the number of OPERABLE channels required depends upon the plant's licensing basis as described in the NRC plant specific Safety Evaluation Report (SER). Generally, two divisions are required to be OPERABLE. However, only one channel per given Function is required if the plant has justified such a design and the NRC SER has accepted the justification.

The controls, instrumentation, and transfer switches are those required for:

- Reactor pressure vessel (RPV) pressure control;
- Decay heat removal;
- RPV inventory control; and
- Safety support systems for the above functions, including service water, component cooling water, and onsite power, including the diesel generators.

The Remote Shutdown System is OPERABLE if all instrument and control channels needed to support the remote shutdown function are OPERABLE. In some cases, Table 3.3.3.2-1 may indicate that the required information or control capability is available from several alternate sources. In these cases, the Remote Shutdown System is OPERABLE as long as one

(continued)

BASES

LCO (continued)

channel of any of the alternate information or control sources for each Function is OPERABLE.

The Remote Shutdown System instruments and control circuits covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure that the instruments and control circuits will be OPERABLE if plant conditions require that the Remote Shutdown System be placed in operation.

APPLICABILITY

The Remote Shutdown System LCO is applicable in MODES 1 and 2. This is required so that the plant can be placed and maintained in ~~MODE 3~~ a safe shutdown condition for an extended period of time from a location other than the control room.

This LCO is not applicable in MODES 3, 4, and 5. In these MODES, the plant is already subcritical and in a condition of reduced Reactor Coolant System energy. Under these conditions, considerable time is available to restore necessary instrument control Functions if control room instruments or control becomes unavailable. Consequently, the LCO do not require OPERABILITY in MODES 3, 4, and 5.

ACTIONS

A Note is included that excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a plant shutdown. This exception is acceptable due to the low probability of an event requiring this system.

Note 2 has been provided to modify the ACTIONS related to Remote Shutdown System Functions. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable Remote Shutdown System Functions provide appropriate compensatory measures for separate Functions.

(continued)

BASES

ACTIONS (continued)

As such, a Note has been provided that allows separate Condition entry for each inoperable Remote Shutdown System Function.

A.1

Condition A addresses the situation where one or more required Functions of the Remote Shutdown System is inoperable. This includes any Function listed in Table 3.3.3.2-1, as well as the control and transfer switches. (Reference 5)

The Required Action is to restore the Function (both divisions, if applicable) to OPERABLE status within 30 days. The Completion Time is based on operating experience and the low probability of an event that would require evacuation of the control room.

B.1

If the Required Action and associated Completion Time of Condition A are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Time is reasonable, based on operating experience, to reach the required MODE from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2.1 (continued)

the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit. As specified in the Surveillance, a CHANNEL CHECK is only required for those channels that are normally energized.

The Frequency is based upon plant operating experience that demonstrates channel failure is rare.

SR 3.3.3.2.2

SR 3.3.3.2.2 verifies each required Remote Shutdown System transfer switch and control circuit performs the intended function. This verification is performed from the remote shutdown panel and locally, as appropriate. Operation of the equipment from the remote shutdown panel is not necessary. The Surveillance can be satisfied by performance of a continuity check. This will ensure that if the control room becomes inaccessible, the plant can be placed and maintained in MODE 3 from the remote shutdown panel and the local control stations. However, this Surveillance is not required to be performed only during a plant outage. Operating experience demonstrates that Remote Shutdown System control channels usually pass the Surveillance when performed at the ~~18~~ 24 month Frequency.

SR 3.3.3.2.3

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. The test verifies the channel responds to measured parameter values with the necessary range and accuracy.

The ~~18~~ 24 month Frequency is based upon operating experience and consistency with the typical industry refueling cycle.

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

(continued)

DBI

INSERT SR 3.3.3.2.2

, relay room, control room equipment room, cable spreading room, north cable run room, or battery room corridor

BASES (continued)

REFERENCES

1. 10 CFR 50, Appendix A, GDC 19.
2. UFSAR, Section 16.6 (DB2)
3. UFSAR, Section 14.5.12.
4. UFSAR, Section 7.2.3.6.f.
5. 10 CFR 50.36 (c)(2)(ii). (DB2)
6. Technical Requirements Manual. (X2)

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.2

Remote Shutdown System

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.3.3.2 - REMOTE SHUTDOWN SYSTEM

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 The SR Frequency of ITS SR 3.3.3.2.2 and SR 3.3.3.2.3 have been modified from 18 months to 24 months, which is consistent with CTS Table 3.2-10. The Bases provides sufficient justification for this Frequency.

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Editorial change made for enhanced clarity or to be consistent with similar statements in other places in the Bases.

PA2 Reviewer's note deleted.

PA3 Changes have been made to reflect the plant specific nomenclature.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific design.

DB2 The appropriate references have been included.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler number 367, Revision 0 have been incorporated into the revised Improved Technical Specifications.

TSTF-367

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 NUREG-1433, Revision 1, Bases reference to "the NRC Policy Statement" has been replaced with 10 CFR 50.36(c)(2)(ii), in accordance with 60 FR 36953 effective August 18, 1995.

X2 The Remote Shutdown Table (Table 3.3.3.2-1) has been relocated to the Technical Requirements Manual. This change is consistent with the provisions of Generic Letter 91-08 for the removal of lists and has recently been approved for Washington Public Power Supply System (WNP2), Nine Mile Point Unit 2, and LaSalle County Station Units 1 and 2.

RAI 3.3.3.2-1

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.3.2

Remote Shutdown System

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

3.3 INSTRUMENTATION

3.3.3.2 Remote Shutdown System

LCO 3.3.3.2 The Remote Shutdown System Functions shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

----------NOTES----------
1. LCO 3.0.4 is not applicable.

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.3.2.2	Verify each required control circuit and transfer switch is capable of performing the intended function.	24 months
SR 3.3.3.2.3	Perform CHANNEL CALIBRATION for each required instrumentation channel.	24 months

B 3.3 INSTRUMENTATION

B 3.3.3.2 Remote Shutdown System

BASES

BACKGROUND

The Remote Shutdown System provides the control room operator with sufficient instrumentation and controls to place and maintain the plant in a safe shutdown condition from locations other than the control room. This capability is necessary to protect against the possibility of the control room, relay room, control room equipment room, cable spreading room, north cable run room, or battery room corridor becoming inaccessible due to a fire. All of these locations contain equipment necessary to achieve safe shutdown from the control room. With the plant in a safe shutdown condition, the safety/relief valves (S/RVs), and the Residual Heat Removal (RHR) System can be used to remove core decay heat and meet all safety requirements. This is accomplished by depressurizing the reactor pressure vessel (RPV) with the use of seven S/RVs and establishing a long term cooling path. Water is pumped from the suppression pool by an RHR pump, through an RHR heat exchanger and to the RPV via the low pressure coolant injection (LPCI) pathway. As reactor water level increases and the main steam lines become flooded, water is recirculated to the suppression pool through the S/RV discharge piping. The long term supply of water from the suppression pool and the ability to operate the RHR System in this closed loop configuration from outside the control room allows operation in a safe shutdown condition for an extended period of time.

In the event that the control room, relay room, control room equipment room, cable spreading room, north cable run room, or battery room corridor becomes inaccessible, the operators can establish control at the remote shutdown panel and place and maintain the plant in a safe shutdown condition. Not all controls and necessary transfer switches are located at the remote shutdown panel. Other major controls are located at the Automatic Depressurization System (ADS) panel and auxiliary shutdown panels. Some controls and transfer switches will have to be operated locally at the switchgear, motor control panels, or other local stations. Following a plant shutdown, the plant can be maintained in a safe shutdown condition for an extended period of time.

(continued)

BASES

BACKGROUND (continued)

The OPERABILITY of the Remote Shutdown System control and instrumentation Functions ensures that there is sufficient information available on selected plant parameters to place and maintain the plant in a safe shutdown condition should the control room, relay room, control room equipment room, cable spreading room, north cable run room, or battery room corridor become inaccessible.

APPLICABLE SAFETY ANALYSES

The Remote Shutdown System is required to provide equipment at appropriate locations outside the control room with a design capability to promptly shut down the reactor, including the necessary instrumentation and controls, to maintain the plant in a safe shutdown condition.

The criteria governing the design and the specific system requirements of the Remote Shutdown System are located in the UFSAR (Refs. 1, 2 and 3).

The Remote Shutdown System satisfies Criterion 4 of 10 CFR 50.36 (c)(2)(ii)(Ref.4).

TSTF

LCO

The Remote Shutdown System LCO provides the requirements for the OPERABILITY of the instrumentation and controls necessary to place and maintain the plant in a safe shutdown condition from locations other than the control room. The instrumentation and controls required are listed in Reference 5.

The controls, instrumentation, and transfer switches are those required for:

- Reactor pressure vessel (RPV) pressure control;
- Decay heat removal;
- RPV inventory control; and

(continued)

BASES

LCO (continued)

- Safety support systems for the above functions, including Emergency Service water, RHR Service water, cresent area unit coolers and onsite power, including the emergency diesel generators.

The Remote Shutdown System is OPERABLE if all instrument and control channels needed to support the remote shutdown function are OPERABLE. In some cases, the required information or control capability may be available from several alternate sources. In these cases, the Remote Shutdown System is OPERABLE as long as one channel of any of the alternate information or control sources for each Function is OPERABLE.

The Remote Shutdown System instruments and control circuits covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure that the instruments and control circuits will be OPERABLE if plant conditions require that the Remote Shutdown System be placed in operation.

APPLICABILITY

The Remote Shutdown System LCO is applicable in MODES 1 and 2. This is required so that the plant can be placed and maintained in a safe shutdown condition for an extended period of time from a location other than the control room.

This LCO is not applicable in MODES 3, 4, and 5. In these MODES, the plant is already subcritical and in a condition of reduced Reactor Coolant System energy. Under these conditions, considerable time is available to restore necessary instrument control Functions if control room instruments or control becomes unavailable. Consequently, the LCO does not require OPERABILITY in MODES 3, 4, and 5.

ACTIONS

A Note (Note 1) is included that excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require a plant shutdown. This exception is acceptable due to the low probability of an event requiring this system.

(continued)

BASES

ACTIONS
(continued)

Note 2 has been provided to modify the ACTIONS related to Remote Shutdown System Functions. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable Remote Shutdown System Functions provide appropriate compensatory measures for separate Functions.

As such, a Note has been provided that allows separate Condition entry for each inoperable Remote Shutdown System Function.

A.1

Condition A addresses the situation where one or more required Functions of the Remote Shutdown System is inoperable. This includes any function listed in Reference 5, as well as the control and transfer switches.

The Required Action is to restore the Function (both divisions, if applicable) to OPERABLE status within 30 days. The Completion Time is based on operating experience and the low probability of an event that would require evacuation of the control room.

B.1

If the Required Action and associated Completion Time of Condition A are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Time is reasonable, based on operating experience, to reach the required MODE from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Channel agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit. As specified in the Surveillance, a CHANNEL CHECK is only required for those channels that are normally energized.

The Frequency is based upon plant operating experience that demonstrates channel failure is rare.

SR 3.3.3.2.2

SR 3.3.3.2.2 verifies each required Remote Shutdown System transfer switch and control circuit performs the intended function. This verification is performed from the remote shutdown panel and locally, as appropriate. Operation of the equipment from the remote shutdown panel is not necessary. The Surveillance can be satisfied by performance of a continuity check. This will ensure that if the control room, relay room, control room equipment room, cable spreading room, north cable run room, or battery room corridor becomes inaccessible, the plant can be placed and maintained in a safe shutdown condition from the remote shutdown panel, auxiliary shutdown panels and the local control stations. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2.2 (continued)

unplanned transient if the Surveillance were performed with the reactor at power. Operating experience demonstrates that Remote Shutdown System control channels usually pass the Surveillance when performed at the 24 month Frequency.

SR 3.3.3.2.3

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. The test verifies the channel responds to measured parameter values with the necessary range and accuracy.

The 24 month Frequency is based upon operating experience and consistency with the typical industry refueling cycle.

REFERENCES

1. UFSAR, Section 16.6.
2. UFSAR, Section 14.5.12.
3. UFSAR, Section 7.2.3.6.j.
4. 10 CFR 50.36 (c)(2)(ii).
5. Technical Requirements Manual.