Entergy

Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

Michael A. Krupa
Director, Extended Power Uprate
Grand Gulf Nuclear Station
Tel. (601) 437-6684

GNRO-2010-00010

February 8, 2010

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

SUBJECT: Responses to NRC Requests for Additional Information Pertaining to License Amendment Request for Power Range Neutron Monitoring System (TAC No. ME2531)

Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. NPF-29

REFERENCES:

1. Entergy Operations, Inc. letter to the NRC, *License Amendment Request – Power Range Neutron Monitoring System Upgrade*, dated November 3, 2009 (ADAMS Accession No. ML093140463)
2. NRC letter to Entergy Operations, Inc., *Grand Gulf Nuclear Station, Unit 1 - Request for Additional Information Re: Power Range Neutron Monitoring System (TAC No. ME2531)*, dated January 15, 2010

Dear Sir or Madam:

In Reference 1, Entergy Operations, Inc. (Entergy) submitted to the NRC a license amendment request (LAR), which proposes to revise the Grand Gulf Nuclear Station (GGNS) Technical Specifications (TS) to reflect the installation of the digital General Electric-Hitachi (GEH) Nuclear Measurement Analysis and Control (NUMAC) Power Range Neutron Monitoring (PRNM) System.

In Reference 2, the NRC staff requested additional information needed to support their review and approval of Reference 1.

Responses to the staff's Requests for Additional Information (RAIs) are provided in Attachment 1 of this letter. Associated revisions to the mark-ups of the proposed changes are provided in Attachment 2.

In addition to the changes pertaining to the NRC RAIs, Entergy discovered a typographical error in marked-up TS Table 3.3.1.1-1, provided on page 13 of Attachment 3 of Reference 1. The reference for Note (b) was inadvertently shown as being deleted. As discussed in Section 4.4.3.5.a of Reference 1, Entergy proposed to relocate the reference to align with the applicable function in the table. A corrected marked-up TS Table 3.3.1.1-1 is provided in Attachment 2. Please replace the current TS Table 3.3.1.1-1 with the corrected table.

The No Significance Hazards Determination and the Environmental Consideration provided in Reference 1 are not impacted by these responses.

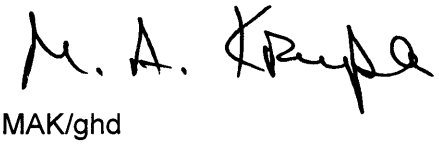
This letter contains no new commitments.

If you have any questions or require additional information, please contact Mr. Guy Davant at (601) 368-5756.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on February 8, 2010.

Sincerely,



MAK/ghd

Attachment:
1. Responses to NRC Requests for Additional Information Pertaining to License Amendment Request – Power Range Neutron Monitoring System Upgrade
2. Revised OL, TS, and TS Bases Pages

cc:

Mr. Elmo E. Collins, Jr.
Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
612 East Lamar Blvd., Suite 400
Arlington, TX 76011-4005

U. S. Nuclear Regulatory Commission
ATTN: Mr. C. F. Lyon, NRR/DORL (w/2)
ATTN: ADDRESSEE ONLY
ATTN: Courier Delivery Only
Mail Stop OWFN/8 B1
11555 Rockville Pike
Rockville, MD 20852-2378

State Health Officer
Mississippi Department of Health
P. O. Box 1700
Jackson, MS 39215-1700

NRC Senior Resident Inspector
Grand Gulf Nuclear Station
Port Gibson, MS 39150

ATTACHMENT 1

GNRO-2010-00010

RESPONSES TO NRC REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO LICENSE AMENDMENT REQUEST POWER RANGE NEUTRON MONITORING SYSTEM UPGRADE

RESPONSES TO NRC REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO LICENSE AMENDMENT REQUEST POWER RANGE NEUTRON MONITORING SYSTEM UPGRADE

Responses to the NRC staff's Requests for Additional Information (RAIs) are provided in Attachment 1 of this letter. Associated revisions to the mark-ups of the proposed changes are provided in Attachment 2.

NRC RAI No. 1

Please explain how a unit restart is allowed by adding the note, "LCO 3.0.4.b is not applicable" to new Required Action J.2.

Attachment 1, page 14 of the application letter states, "Entergy also proposes a note that states LCO 3.0.4.b is not applicable to new Required Action J.2. This note allows unit restart in the event of a shutdown during the 120-day completion time." However, Limiting Condition for Operation (LCO) 3.0.4.a and LCO 3.0.4.c remain applicable. LCO 3.0.4.a allows entry into a MODE or other specified condition in the Applicability, when an LCO is not met, only when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. Condition J is referenced in Table 3.3.1.1-1 and entered as required by Required Action D.1. Condition J Required Action J.1 requires initiating an alternate method to detect and suppress thermal hydraulic instability oscillations within 12 hours and J.2 requires restoring the required channels to operable status within 120 days. Condition J does not permit continued operation for an unlimited period of time. LCO 3.0.4.c allows entry into a MODE or other specified condition in the Applicability, when an LCO is not met, only when an allowance is stated in the individual value, parameter, or other Specification. LCO 3.0.4.c is not allowed in any condition in GGNS TS 3.3.1.1.

Response

Entergy agrees with the NRC's comments and proposes to revise the wording of the proposed note applied to Required Action J.2 to read, "LCO 3.0.4 is not applicable." This revised wording addresses the NRC's comments and allows unit restart in the event of a shutdown during the 120-day completion time of Required Action J.2.

As discussed in Section 4.4.1.2 of the LAR, this note is consistent with the original intent of the NUMAC PRNM Licensing Topical Report (LTR), which is to allow normal plant operations to continue during the recovery time from a hypothesized design problem with the Option III stability solution algorithms. This proposed note was approved by the NRC for Monticello Nuclear Generating Plant[1] and Peach Bottom Atomic Power Station, Units 2 and 3[2].

---

[1] NRC letter to Northern States Power Company, *Monticello Nuclear Generating Plant (MNGP) – Issuance of Amendment Regarding the Power Range Neutron Monitoring System (TAC No. MD8064)*, dated January 30, 2009 (ADAMS Ascension No. ML083440681)

Entergy has revised TS Insert B and the discussion of Required Action J.2 in TS Bases Insert J (contained on page 9 of LAR Attachment 3 and page 27 of LAR Attachment 4, respectively) to reflect the wording change for the note, as specified above.

NRC RAI No. 2

Please provide revised proposed TS Bases changes that are consistent with Technical Specification Task Force (TSTF)-493, Revision 4, or justify deviations.

The applicability section in Federal Register (74 FR 58065), "Notice of Opportunity for Public Comment on the Proposed Model Safety Evaluation for Plant-Specific Adoption of Technical Specification Task Force Traveler-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS Functions" stated, "The licensee must add footnotes to all the functions identified in TSTF Traveler-493, Revision 4, Appendix A, and must incorporate the related TS Bases changes." for any licensee wishing to adopt TS task force (TSTF) Traveler-493, option A without changes to setpoint values. The NRC staff considers the changes made by TSTF-493, Revision 4 to TS 3.3.1.1 Bases sections: (1) background; (2) applicable safety analyses, LCO, and applicability; (3) actions; and (4) surveillance requirements to be related to GGNS proposed amendment.

Response

Entergy plans to revise the "BACKGROUND" and "APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY" sections of TS Bases 3.3.1.1 to reflect TSTF-493, Rev. 4 wording as applied to the APRM functions. Specifically, Entergy has added subsections entitled Application of TSTF-493, Rev. 4 (Ref. 17) to APRM Functions 2.a, 2.b, 2.d, and 2.f to TS Bases pages B 3.3-2 and B 3.3-4 as Inserts 1 and 2, respectively.

NRC RAI No. 3

Please state which SRs verify trip setpoint settings for functions 2.a, 2.b, 2.c, 2.d, 2.e, and 2.f in TS Table 3.3.1.1-1, and provide a revised TS Table 3.3.1.1-1 with the addition of notes (d) and (e) for these functions as needed.

The proposed change revises GGNS TSs to incorporate NRC-approved TSTF Traveler-493, Revision 4, to be consistent with Option A. Option A, without changes to setpoint values, adds two Notes to SRs in the Surveillance Requirement Column of TSs Instrumentation Function Tables. Specifically, Notes are added to TS 3.3.1.1 SRs that require verifying trip setpoint setting values, (i.e. Channel Calibration and Channel Functional Test SRs) for NUREG-1434.

The first Surveillance Note requires evaluation of channel performance for the condition where the As-Found setting for the channel setpoint is outside its As-Found Tolerance but conservative with respect to the AV. This is proposed note (d) to TS Table 3.3.1.1-1. The second Surveillance Note requires that the As-Left setting for the channel be returned to

---

[2] NRC letter to Exelon Nuclear, *Peach Bottom Atomic Power Station, Units 2 and 3 – Issuance of Amendment Re: Activation of Oscillation Power Range Monitor Trip (TAC Nos. MC2219 and MC2220)*, dated March 21, 2005 (page 4 of SE) (ADAMS Accession No. ML05270020)

within the As-Left Tolerance of the Nominal Trip Setpoint (NTSP)]. This is proposed note (e) to TS Table 3.3.1.1-1.

Response

At GGNS, trip setpoints are typically verified via channel calibration procedures, only. APRM Functions 2.a, 2.b, 2.d, and 2.f will follow this practice with their trip setpoints being verified via channel calibration SR 3.3.1.1.10, only. The proposed Notes (d) and (e) have been applied in TS Table 3.3.1.1 to SR 3.3.1.1.10 for these functions, as discussed in Section 4.4.3.1 of the LAR. Notes (d) and (e) are not applicable to APRM Functions 2.c and 2.e, as discussed in Section 5.1.5 of the LAR.

NRC RAI No. 4

In its application, the licensee proposed the following new operating license condition (OLC):

> During Cycle 19, GGNS may conduct monitoring of the Oscillation Power Range Monitor (OPRM). During this time, the OPRM Upscale function (Function 2.f of Technical Specification Table 3.3.1.1-1) may be disabled and operated in an 'indicate only' mode at which time technical specification requirements would not apply. During such time, Backup Stability Protection measures will be implemented via GGNS procedures to provide an alternate method to detect and suppress reactor core thermal hydraulic instability oscillations.

In the application, the licensee stated that it would review the operating data, setpoints, and margins at the end of the OPRM monitoring period. Once it determines that the results are acceptable, the licensee will enable the OPRM (with applicable SRs met) by connecting it to the reactor protection system trip relays, completing implementation of the hardware changes, and notifying the NRC.

However, the proposed OLC wording does not restrict GGNS from returning the OPRM into "indicate only" mode, once the OPRM has been enabled during Cycle 19. Also, the proposed "may" wording in the OLC suggests that GGNS has the option to disable the OPRM and conduct monitoring of the OPRM. Please revise the proposed OLC to address these concerns or provide further justification for the proposed wording.

Response

Entergy proposes to revise the wording of the OLC as follows (changes denoted in ***bold, italicized*** text):

> During Cycle 19, GGNS ***will*** conduct monitoring of the Oscillation Power Range Monitor (OPRM). During this time, the OPRM Upscale function (Function 2.f of Technical Specification Table 3.3.1.1-1) ***will*** be disabled and operated in an 'indicate only' mode ***and*** technical specification requirements ***will*** not apply ***to this function***. During such time, Backup Stability Protection measures will be implemented via GGNS procedures to provide an alternate method to detect and suppress reactor core thermal hydraulic instability oscillations. ***Once monitoring has been successfully completed, the OPRM Upscale function will be enabled and technical specification requirements will be***

applied to the function; no further operating with this function in an "indicate only" mode will be conducted.

Entergy has revised OL Insert A (contained on page 2 of LAR Attachment 3) to reflect the above wording. The OL page associated with this insert was provided on page 1 of LAR Attachment 3; it reflected OL Amendment 182. The current OL Amendment is now 183. Therefore, Entergy is providing the revised OL Amendment 183 page along with Insert A to reflect the current OL amendment.

ATTACHMENT 2

GNRO-2010-00010

REVISED OL, TS, TS BASES, AND INSERT PAGES

INSERT B – New Conditions J and K with Required Actions

J. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	J.1	Initiate alternate method to detect and suppress thermal hydraulic instability oscillations.	12 hours
	AND		
	J.2	--------- NOTE -------- LCO 3.0.4 is not applicable. ---------- Restore required channels to OPERABLE.	120 days
K. Required Action and associated Completion Time of Condition J not met.	K.1	Reduce THERMAL POWER to < 24% RTP.	4 hours

INSERT J – New Required Actions J.1 and J.2

J.1

If OPRM Upscale trip capability is not maintained, Condition J exists. Reference 15 justified use of alternate methods to detect and suppress oscillations for a limited period of time. The alternate methods are procedurally established consistent with the guidelines identified in Reference 16 requiring manual operator action to scram the plant if certain predefined events occur. The 12-hour allowed action time is based on engineering judgment to allow orderly transition to the alternate methods while limiting the period of time during which no automatic or alternate detect and suppress trip capability is formally in place. Based on the small probability of an instability event occurring at all, the 12 hours is judged to be reasonable.

J.2

The alternate method to detect and suppress oscillations implemented in accordance with J.1 was evaluated (Reference 15) based on use up to 120 days only. The evaluation, based on engineering judgment, concluded that the likelihood of an instability event that could not be adequately handled by the alternate methods during this 120-day period was negligibly small. The 120-day period is intended to be an outside limit to allow for the case where design changes or extensive analysis might be required to understand or correct some unanticipated characteristic of the instability detection algorithms or equipment. This action is not intended and was not evaluated as a routine alternative to returning failed or inoperable equipment to OPERABLE status. Correction of routine equipment failure or inoperability is expected to normally be accomplished within the completion times allowed for Actions for Conditions A and B.

LCO 3.0.4 is not applicable to J.2 to allow unit restart in the event of a shutdown during the 120-day completion time.

BASES

BACKGROUND (continued)

The RPS is comprised of two independent trip systems (A and B), with two logic channels in each trip system (logic channels A1 and A2, B1 and B2), as shown in Reference 1. The outputs of the logic channels in a trip system are combined in a one-out-of-two logic so either channel can trip the associated trip system. The tripping of both trip systems will produce a reactor scram. This logic arrangement is referred to as one-out-of-two taken twice logic. Each trip system can be reset by use of a reset switch. If a full scram occurs (both trip systems trip), a relay prevents reset of the trip systems for 10 seconds after the full scram signal is received. This 10 second delay on reset ensures that the scram function will be completed.

Two scram pilot valves are located in the hydraulic control unit (HCU) for each control rod drive (CRD). Each scram pilot valve is solenoid operated, with the solenoids normally energized. The scram pilot valves control the air supply to the scram inlet and outlet valves for the associated CRD. When either scram pilot valve solenoid is energized, air pressure holds the scram valves closed and, therefore, both scram pilot valve solenoids must be de-energized to cause a control rod to scram. The scram valves control the supply and discharge paths for the CRD water during a scram. One of the scram pilot valve solenoids for each CRD is controlled by trip system A, and the other solenoid is controlled by trip system B. Any trip of trip system A in conjunction with any trip in trip system B results in de-energizing both solenoids, air bleeding off, scram valves opening, and control rod scram.

The backup scram valves, which energize on a scram signal to depressurize the scram air header, are also controlled by the RPS. Additionally, the RPS System controls the SDV vent and drain valves such that when both trip systems trip, the SDV vent and drain valves close to isolate the SDV.

INSERT 1

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The actions of the RPS are assumed in the safety analyses of References 2, 3, and 4. The RPS initiates a reactor scram when monitored parameter values exceed the Allowable Values specified by the setpoint methodology and listed in Table 3.3.1.1-1 to preserve the integrity of the fuel cladding, the reactor coolant pressure boundary (RCPB), and

(continued)

INSERT 1

Application of TSTF-493, Rev. 4 (Ref. 17) to APRM Functions 2.a, 2.b, 2.d, and 2.f

10 CFR 50.36(c)(1)(ii)(A) requires that Technical Specifications include LSSS for variables that have significant safety functions. LSSS are defined by the regulation as "...settings for automatic protective devices...so chosen that automatic protective actions will correct the abnormal situation before a safety limit is exceeded." The Analytical Limit is the limit of the process variable at which a protective action is initiated, as established by the safety analysis, to ensure that a SL is not exceeded. Any automatic protection action that occurs on reaching the Analytical Limit therefore ensures that the SL is not exceeded. However, in practice, the actual settings for automatic protective channels must be chosen to be more conservative than the Analytical Limit to account for instrument loop uncertainties related to the setting at which the automatic protective action would actually occur.

The trip setpoint is a predetermined setting for a protection channel chosen to ensure automatic actuation prior to the process variable reaching the Analytical Limit and thus ensuring that the SL would not be exceeded. As such, the trip setpoint accounts for uncertainties in setting the channel (e.g., calibration), uncertainties in how the channel might actually perform (e.g., repeatability), changes in the point of action of the channel over time (e.g., drift during surveillance intervals), and any other factors which may influence its actual performance (e.g., harsh accident environments). In this manner, the trip setpoint ensures that SLs are not exceeded.

Technical Specifications contain values related to the OPERABILITY of equipment required for safe operation of the facility. OPERABLE is defined in Technical Specifications as "...being capable of performing its specified safety function(s)." Relying solely on the trip setpoint to define OPERABILITY in Technical Specifications would be an overly restrictive requirement if it were applied as an OPERABILITY limit for the "as found" value of a protection channel setting during a Surveillance. This would result in Technical Specification compliance problems, as well as reports and corrective actions required by the rule which are not necessary to ensure safety. For example, an automatic protection channel with a setting that has been found to be different from the trip setpoint due to some drift of the setting may still be OPERABLE because drift is to be expected. This expected drift would have been specifically accounted for in the setpoint methodology for calculating the trip setpoint and thus the automatic protective action would still have ensured that the SL would not be exceeded with the "as found" setting of the protection channel. Therefore, the channel would still be OPERABLE because it would have performed its safety function and the only corrective action required would be to reset the channel within the established as-left tolerance around the trip setpoint to account for further drift during the next surveillance interval.

Note that, although the channel is OPERABLE under these circumstances, the trip setpoint must be left adjusted to a value within the as-left tolerance, in accordance with uncertainty assumptions stated in the referenced setpoint methodology (as-left criteria), and confirmed to be operating within the statistical allowances of the uncertainty terms assigned (as-found criteria).

However, there is also some point beyond which the channel may not be able to perform its function due to, for example, greater than expected drift. This value needs to be specified in the Technical Specifications in order to define OPERABILITY of the channels and is designated as the Allowable Value.

If the actual setting (as-found setpoint) of the channel is found to be conservative with respect to the Allowable Value but is beyond the as-found tolerance, the channel is OPERABLE but degraded. The degraded condition will be further evaluated during performance of the SR. This evaluation will consist of resetting the channel setpoint to the trip setpoint (within the allowed tolerance), and evaluating the channel response. If the channel is functioning as required and expected to pass the next surveillance, then the channel is OPERABLE and can be restored to service at the completion of the surveillance. After the surveillance is completed, the channel as-found condition will be entered into the Corrective Action Program for further evaluation.

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for.

The OPERABILITY of scram pilot valves and associated solenoids, backup scram valves, and SDV valves, described in the Background section, are not addressed by this LCO.

The individual Functions are required to be OPERABLE in the MODES specified in the Table that may require an RPS trip to mitigate the consequences of a design basis accident or transient. To ensure a reliable scram function, a combination of Functions is required in each MODE to provide primary and diverse initiation signals.

RPS is required to be OPERABLE in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies. Control rods withdrawn from a core cell containing no fuel assemblies do not affect the reactivity of the core and therefore are not required to have the capability to scram. Provided all other control rods remain inserted, the RPS function is not required. In this condition, the required SDM (LCO 3.1.1, "SHUTDOWN MARGIN (SDM)") and refuel position one-rod-out interlock (LCO 3.9.2, "Refuel Position One-Rod-Out Interlock") ensure that no event requiring RPS will occur. During normal operation in MODES 3 and 4, all control rods are fully inserted and the Reactor Mode Switch—Shutdown Position control rod withdrawal block (LCO 3.3.2.1, "Control Rod Block Instrumentation") does not allow any control rod to be withdrawn. Under these conditions, the RPS function is not required to be OPERABLE.

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

INSERT 2 →

1.a. Intermediate Range Monitor (IRM) Neutron Flux—High

The IRMs monitor neutron flux levels from the upper range of the source range monitors (SRMs) to the lower range of the average power range monitors (APRMs). The IRMs are capable of generating trip signals that can be used to prevent fuel damage resulting from abnormal operating transients in the intermediate power range. In this power range, the most significant source of reactivity change is due to control

(continued)

INSERT 2

Application of TSTF-493, Rev. 4 (Ref. 17) to APRM Functions 2.a, 2.b, 2.d, and 2.f

Permissive and interlock setpoints allow the blocking of trips during plant startups, and restoration of trips when the permissive conditions are not satisfied, but they are not explicitly modeled in the Safety Analyses. These permissives and interlocks ensure that the starting conditions are consistent with the safety analysis, before preventive or mitigating actions occur. Because these permissives or interlocks are only one of multiple conservative starting assumptions for the accident analysis, they are generally considered as nominal values without regard to measurement accuracy.

Allowable Values for RPS Instrumentation Functions are specified for each RPS Function specified in Table 3.3.1.1-1. Trip setpoints and the methodologies for calculating the as-left and as-found tolerances are described in the Technical Requirements Manual. The nominal setpoints are selected to ensure that the actual setpoints remain conservative with respect to the as-found tolerance between successive CHANNEL CALIBRATIONS. After each calibration, the trip setpoint shall be left within the as-left band around the setpoint.

GGNS OPERATING LICENSE

(b) SERI is required to notify the NRC in writing prior to any change in (i) the terms or conditions of any new or existing sale or lease agreements executed as part of the above authorized financial transactions, (ii) the GGNS Unit 1 operating agreement, (iii) the existing property insurance coverage for GGNS Unit 1 that would materially alter the representations and conditions set forth in the Staff's Safety Evaluation Report dated December 19, 1988 attached to Amendment No. 54. In addition, SERI is required to notify the NRC of any action by a lessor or other successor in interest to SERI that may have an effect on the operation of the facility.

C. The license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Entergy Operations, Inc. is authorized to operate the facility at reactor core power levels not in excess of 3898 megawatts thermal (100 percent power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 183 are hereby incorporated into this license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

~~The Surveillance Requirements (SRs) for Diesel Generator 12 contained in the Technical Specifications and listed below, are not required to be performed immediately upon implementation of Amendment No. 169. The SRs listed below shall be successfully demonstrated at the next regularly scheduled performance.~~

~~SR 3.8.1.9,~~
~~SR 3.8.1.10, and~~
~~SR 3.8.1.14~~

Amendment No. ~~183~~

INSERT A - Exception

INSERT A - Exception

During Cycle 19, GGNS will conduct monitoring of the Oscillation Power Range Monitor (OPRM). During this time, the OPRM Upscale function (Function 2.f of Technical Specification Table 3.3.1.1-1) will be disabled and operated in an 'indicate only' mode and technical specification requirements will not apply to this function. During such time, Backup Stability Protection measures will be implemented via GGNS procedures to provide an alternate method to detect and suppress reactor core thermal hydraulic instability oscillations. Once monitoring has been successfully completed, the OPRM Upscale function will be enabled and technical specification requirements will be applied to the function; no further operating with this function in an "indicate only" mode will be conducted.

Table 3.3.1.1-1 (page 1 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Intermediate Range Monitors					
a. Neutron Flux—High	2	3	H	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.12 SR 3.3.1.1.13	≤ 122/125 divisions of full scale
	5(a)	3	I	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.12 SR 3.3.1.1.13	≤ 122/125 divisions of full scale
b. Inop	2	3	H	SR 3.3.1.1.3 SR 3.3.1.1.13	NA
	5(a)	3	I	SR 3.3.1.1.4 SR 3.3.1.1.13	NA
2. Average Power Range Monitors					
a. Neutron Flux—High, Setdown	2	3	H	~~SR 3.3.1.1.1~~ ~~SR 3.3.1.1.3~~ SR 3.3.1.1.7 SR 3.3.1.1.10 ~~SR 3.3.1.1.13~~	≤ 20% RTP
b. Fixed Neutron Flux—High	1	3	G	~~SR 3.3.1.1.1~~ SR 3.3.1.1.2 SR 3.3.1.1.7 ~~SR 3.3.1.1.8~~ SR 3.3.1.1.10 ~~SR 3.3.1.1.13~~ ~~SR 3.3.1.1.15~~	≤ 120% RTP
c. Inop	1,2	3	H	~~SR 3.3.1.1.7~~ ~~SR 3.3.1.1.8~~ ~~SR 3.3.1.1.13~~	NA
d. Flow Biased Simulated Thermal Power - High	1	3	G	~~SR 3.3.1.1.1~~ SR 3.3.1.1.2 SR 3.3.1.1.7 ~~SR 3.3.1.1.8~~ SR 3.3.1.1.10 ~~SR 3.3.1.1.13~~ ~~SR 3.3.1.1.15~~ ~~SR 3.3.1.1.16~~ SR 3.3.1.1.17 ~~SR 3.3.1.1.18~~	

(c)

(d), (e)

SR 3.3.1.1.19
SR 3.3.1.1.20

SR 3.3.1.1.20

(b)

SR 3.3.1.1.19
SR 3.3.1.1.20

INSERT D - New APRM Functions 2.e and 2.f

(continued)

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.
(b) ~~Allowable Values specified in the COLR. Allowable Value modification required by the COLR due to reductions in feedwater temperature may be delayed for up to 12 hours.~~

Two-Loop Operation: 0.65W + 62.9% RTP and ≤ 113% RTP
Single-Loop Operation: 0.65W + 42.3% RTP

INSERT E - New Table Notes (c), (d), (e), and (f)