Entergy

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GNRO-2006/00058

November 1, 2006

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

SUBJECT: License Amendment Request
Changes to the Local Power Range Monitor (LPRM) Calibration Frequency
Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. NPF-29

REFERENCE: Letter from Mr. S. Patrick Sekerak of USNRC to Mr. William A. Eaton of Entergy, "Grand Gulf Nuclear Station, Unit 1 – Issuance of Amendment Re: Revision of the Minimum Critical Power Ratio Safety Limit for Cycle 12 Operation (TAC NO. MB0514)," dated April 26, 2001 (ADAMS accession number ML011230243)

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Operations, Inc. (Entergy) hereby requests the following amendment for Grand Gulf Nuclear Station, Unit 1 (GGNS). The proposed change will extend the surveillance interval of the local power range monitor (LPRM) calibrations from 1000 megawatt-days/ton (MWD/T) to 2000 MWD/T.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that this change involves no significant hazards consideration. The bases for these determinations are included in the attached submittal.

Some of the information in Attachment 1, "Analysis of Proposed Technical Specification Change – Proprietary," is proprietary to AREVA NP Inc. AREVA NP requests that the proprietary information be withheld from public disclosure in accordance with 10 CFR 9.17(a)(4), 10 CFR 2.390 (a)(4), and 10 CFR 2.390 (b)(1). A non-proprietary version of Attachment 1 is provided as Attachment 4, "Analysis of Proposed Technical Specification Change - Non-Proprietary." An affidavit by the information owner, AREVA NP, supporting the request for non-disclosure is provided in Attachment 5.

The proposed change does not include any new commitments.

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The NRC has approved similar TS changes for other nuclear power plants, including Entergy's James A. Fitzpatrick Nuclear Power Plant, Vermont Yankee Nuclear Power Station, and River Bend Station. The LPRM calibration extensions at these plants were approved on the basis that the uncertainty in the core power distribution remained below the limits allowed by General Electric (GE) safety limit analysis. Extending the LPRM calibration interval may increase the LPRM detector response uncertainty due to minor changes in LPRM sensitivity between calibrations. However, the use of improved core monitoring systems and newer design LPRM chambers, which exhibit consistent LPRM sensitivity throughout their useful nuclear life, allows a larger calibration interval without significantly affecting the power distribution uncertainty.

GGNS does not currently use GE fuel or the GE core monitoring system but rather uses AREVA NP (formerly referred to as Framatome-ANP or Siemens) fuel and the AREVA NP POWERPLEX III core monitoring system. However, the proposed change is similarly justified based upon a plant specific evaluation that confirms that the change in the core power distribution uncertainty caused by the extended surveillance interval is maintained within the uncertainties currently used in the GGNS safety limit analysis. The uncertainties are likewise based upon GGNS use of improved LPRM chambers and improved core monitoring systems.

Per the above Reference, the uncertainty associated with the extended LPRM calibration frequency was previously incorporated into the GGNS MCPR safety limit analysis in support of MCPR safety limit changes associated with Cycle 12 operation. AREVA NP has performed GGNS plant specific statistical evaluations which confirm that the uncertainty associated with the extended LPRM calibration interval used in the Cycle 12 and subsequent cycle analyses remains valid. Therefore, the proposed change does not affect any safety analysis methods, core thermal limits, or current safety analysis results.

Entergy requests approval of the proposed amendment by June 1, 2007. Once approved, the amendment shall be implemented within 60 days. Although this request is neither exigent nor emergency, your prompt review is requested.

If you have any questions or require additional information, please contact Ron Byrd at 601-368-5792.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 1, 2006.

Sincerely,

for W. R. Brian
Acting Vice President, Operations
Grand Gulf Nuclear Station, Unit 1

RWB/amt

Attachments:
1. Analysis of Proposed Technical Specification Change – Proprietary Version
2. Proposed Technical Specification Changes (mark-up)
3. Changes to Technical Specification Bases Pages – For Information Only
4. Analysis of Proposed Technical Specification Change - Non-Proprietary Version
5. Affidavit for Confidential and Proprietary Information

cc: Dr. Bruce S. Mallett
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Mr. D. E. Levanway (Wise Carter)
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Mr. J. N. Compton

GNRO-2006/00058

bcc:
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GGN CENTRAL FILE (56)		
GGN PLANT LICENSING		
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OTHER: File (LRS_DOCS Directory - GNRI or GNRO)

Attachment 1 Contains Proprietary Information

Attachment 2

GNRO-2006/00058

Proposed Technical Specification Changes (mark-up)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.5	Deleted	
SR 3.3.1.1.6	Deleted	
SR 3.3.1.1.7	Calibrate the local power range monitors.	~~1000~~ 2000 MWD/T average core exposure
SR 3.3.1.1.8	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.1.1.9	Calibrate the trip units.	92 days

(continued)

(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. 169 are hereby incorporated into this license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

Insert new Amendment No.

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

Attachment 3

GNRO-2006/00058

Changes to Technical Specification Bases Pages
For Information Only

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.7

LPRM gain settings are determined from the Core power distribution calculated by the Core Performance Monitoring system based on the local flux profiles measured by the Traversing Incore Probe (TIP) System. This establishes the relative local flux profile for appropriate representative input to the APRM System. The 1000 MWD/T frequency is based on operating experience with LPRM sensitivity changes.

2000 MWD/T (megawatt days/ton)

SR 3.3.1.1.8 and SR 3.3.1.1.11

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The 92 day Frequency of SR 3.3.1.1.8 is based on the reliability analysis of Reference 9.

The 18 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. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

For the purpose of calculating this surveillance frequency, the ton (T) unit of weight is expressed in terms of metric tons of uranium fuel residing in the reactor core.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.9

The calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.1.1-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days for SR 3.3.1.1.9 is based on the reliability analysis of Reference 9.

SR 3.3.1.1.10, SR 3.3.1.1.12 and SR 3.3.1.1.17

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

Note 1 states that neutron detectors are excluded from CHANNEL CALIBRATION because of the difficulty of simulating a meaningful signal. Changes in neutron detector sensitivity are compensated for by performing the 7 day calorimetric calibration (SR 3.3.1.1.2) and the ~~1000~~ 2000 MWD/T LPRM calibration against the TIPs (SR 3.3.1.1.7). A second Note is provided that requires the APRM and IRM SRs to be performed within 12 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM and IRM Functions cannot be performed in MODE 1 without utilizing jumpers, lifted leads or movable links. This Note allows entry into MODE 2 from MODE 1 if the associated Frequency is not met per SR 3.0.2. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

(continued)

Attachment 4

GNR0-2006/00058

Analysis of Proposed Technical Specification Change
Non-Proprietary

1.0 DESCRIPTION

This letter is a request to amend Operating License NPF-29 for Grand Gulf Nuclear Station, Unit 1 (GGNS).

The proposed change will extend the surveillance interval of the local power range monitor (LPRM) calibrations from 1000 megawatt-days/ton (MWD/T) to 2000 MWD/T. For the purpose of calculating this surveillance frequency, the ton (T) unit of weight is expressed in terms of metric tons of fuel residing in the reactor core.

2.0 PROPOSED CHANGE

GGNS Technical Specification (TS) Surveillance Requirement (SR) 3.3.1.1.7 requires the LPRMs to be calibrated at an interval of 1,000 MWD/T (approximately every 36 days). Entergy proposes to revise the calibration interval to 2,000 MWD/T (approximately every 72 days).

The current GGNS MCPR safety limit analysis already accounts for the extended calibration interval. The core power distribution uncertainty associated with the extended LPRM calibration interval was previously incorporated into the GGNS MCPR safety limit analysis in support of MCPR safety limit changes associated with Cycle 12 operation (approved by the NRC per Reference 4). Subsequent reload analyses have also included the uncertainties associated with the extended LPRM calibration interval. Therefore, the change to SR 3.3.1.1.7 to extend the LPRM calibration interval does not affect any safety analysis methods, core thermal limits, or current safety analysis results.

3.0 BACKGROUND

The LPRMs are part of the neutron monitoring system. The neutron monitoring system is a system of in-core neutron detectors and out-of-core electronic monitoring equipment. The system provides indication of neutron flux, which can be correlated to thermal power level for the entire range of flux conditions that can exist in the core. The neutron monitoring system provides inputs to the Rod Control and Information System to initiate rod blocks if preset flux limits are exceeded, and inputs to the Reactor Protection System to initiate a scram if other limits are exceeded.

The source range monitors (SRMs) and the intermediate range monitors (IRMs) provide flux level indications during reactor startup and low power operation. The LPRMs and average power range monitors (APRMs) allow assessment of local and overall flux conditions during power range operation. The APRM channels receive input signals from the LPRMs within the reactor core to provide an indication of the power distribution and local power changes. The APRM channels average these LPRM signals to provide a continuous indication of average reactor power.

The LPRM system includes 44 LPRM detector strings having detectors located at different axial heights in the core; each detector string contains four fission chambers. These assemblies are distributed to monitor four horizontal planes throughout the core.

At least 14 LPRM inputs are required for each APRM channel, with at least two LPRM inputs from each of the four axial levels at which the LPRMs are located to provide adequate coverage of the entire core. Additional information on the LPRMs is provided in GGNS Updated Final Safety Analysis Report (FSAR) section 7.6.1.5.5.

LPRMs are calibrated periodically because of fuel changes and depletion of the fissile detection media in the fission chambers. Through this process, instrument uncertainties in the measurement of core operating parameters may be minimized. Calibration data are obtained from the traversing in-core probe (TIP) system, using the movable neutron detectors to measure the in-core flux distribution for comparison with LPRM readings.

The LPRM calibration interval extension is proposed to extend the life of the TIP drives and lessen the impact on plant personnel workload. The change is justified based upon the current licensing basis safety analysis and plant specific data which confirms that the GGNS LPRM response behavior is bounded by the approved power distribution uncertainties used in the MCPR safety limit analysis. The proposed change does not affect any safety analysis methods, core thermal limits, or current safety analysis results.

4.0 TECHNICAL ANALYSIS

The GGNS TS currently requires LPRMs to be calibrated every 1000 MWD/T. This calibration interval was originally based on using an older General Electric (GE) core monitoring process system (P-1) and older design LPRM detectors. GGNS currently uses an improved AREVA NP POWERPLEX-III core monitoring software system and newer design LPRM chambers (NA250 series) which exhibit more consistent sensitivity than older LPRM detectors.

Extending the LPRM calibration interval may increase the LPRM detector response uncertainty due to minor changes in LPRM sensitivity between calibrations. The LPRM detector response uncertainty value is used in the calculation of radial bundle power uncertainty in the MCPR safety limit analyses. AREVA NP has evaluated the additional LPRM detector response uncertainty due to the extended calibration interval and confirmed that it does not increase the radial bundle power distribution uncertainty ([[ ]] for two-loop recirculation operation and [[ ]] for single loop operation) currently assumed in the GGNS MCPR safety limit analysis.

The generic analysis which quantifies the uncertainty associated with BWR core monitoring using the POWERPLEX-III Core Monitoring Software System is presented in References 1 and 2. The approved generic radial bundle power uncertainty is [[ ]] for C-lattice reactor core designs and for the similar S-lattice reactor core designs which GGNS employs with use of the ATRIUM -10 fuel. This uncertainty value is the minimum value used in plant MCPR safety limit analyses and does not account for certain plant specific assumptions such as loss

of neutron monitoring instrumentation or extended LPRM calibration intervals. The AREVA NP (previously known as Siemens Power Corporation), method of accounting for plant specific incremental changes in core monitoring uncertainties is described in Reference 3. The referenced letter noted that the individual incremental uncertainty associated with either a nominal loss of LPRMs, a loss of TIP machines, or an extended LPRM calibration interval were considered negligible and the approved generic radial bundle power uncertainty (i.e., [[ ]] for C-lattice or S-lattice cores) remained applicable for each of those conditions. However, for combinations of such uncertainties, the total incremental uncertainty calculated for each specific case must be added to the generic minimum radial bundle power uncertainty used in the calculation of the MCPR safety limit for the core analyzed. Since GGNS uses an S-lattice core, the applicable minimum radial bundle power uncertainty is [[ ]]. The additional uncertainties associated with combinations of additional assumptions such as a loss of LPRMs combined with an extended calibration interval must be added to the minimum [[ ]] value to arrive at the proper radial bundle power distribution uncertainty to be used in the MCPR safety limit analyses.

The current GGNS MCPR safety limits were approved by license Amendment No. 146 (Reference 4). The License Amendment was obtained to support the transition to core designs that used ATRIUM-10 fuel. The current radial bundle power distribution uncertainty used in the GGNS MCPR safety limit analysis is [[ ]] for two-loop recirculation operation and [[ ]] for single loop operation. The minimum radial bundle power uncertainty of [[ ]] was increased to these values to account for a combination of plant specific analysis assumptions. These assumptions consisted of:

- up to 40% of the TIP machines out of service,
- up to 50% of the LPRMs out of service, and
- an LPRM calibration interval of 2500 Effective Full Power Hours (which bounds the 2000 MWD/T interval).

Each of these assumptions contributed to the increase in radial bundle power uncertainty used in the MCPR safety limit calculation. The LPRM response uncertainty normally used for a 1000 MWD/T calibration interval is 3.4% (see section 9.1 of Reference 1). The LPRM response uncertainty was increased to 4.3% to account for the extended calibration interval. This assumption was conservative at the time since the TS required LPRM calibration interval remained at 1000 MWD/T. In order to justify the proposed change to the calibration frequency, GGNS requested AREVA NP to perform plant specific LPRM response uncertainty analysis to confirm that the 4.3% LPRM response uncertainty was bounding for GGNS based upon GGNS LPRM response data.

AREVA NP has completed the GGNS plant specific LPRM uncertainty analysis and confirmed that the 4.3% LPRM response uncertainty used in the MCPR safety limit analysis remains bounding for GGNS if the LPRM calibration interval were extended from 1000 MWD/T to 2000 MWD/T. GGNS cycle exposure data was collected from operating Cycle 3 through Cycle 14. Data points related to cycle exposure intervals up to 1600 MWD/T were used for the 1000

MWD/T calibration interval analysis. Data points for cycle exposure intervals of up to 3000 MWD/T were used for the 2000 MWD/T calibration interval. The data points used in the analysis were LPRM calibration electric current readings which are proportional to the neutron flux level. Predicted calibration electrical currents were compared with measured calibration currents for different LPRM effective exposure decay factors (λ). The uncertainties (i.e., standard deviations) were then calculated from the relative differences. The calculation was performed based on approximately 900 LPRM calibration points using detector specific LPRM decay factors determined by the calibration process. The calculation was repeated without crediting the detector specific LPRM decay factors, using the nominal LPRM decay factor resulting in a slightly more conservative increase in uncertainty. This more conservative value was used to determine the LPRM response uncertainty. The analysis determined that the increase in LPRM response uncertainty resulting from the extended calibration interval was not significant (a maximum standard deviation increase of only [[ ]]). Table 1 provides a summary of the calculated relative standard deviations for different LPRM effective exposure decay factors.

TABLE 1
Summary of LPRM Calibration Current Uncertainty
(Relative Standard Deviations)

When the uncertainty increase of [[ ]] is added to the LPRM response uncertainty for a calibration interval of 1000 MWD/T (i.e., 3.4%), the final uncertainty value (i.e., [[ ]]) remains bounded by the 4.3% LPRM response uncertainty used in the calculation of total radial bundle power uncertainty. This result is very conservative since it is based on an arithmetic increase in the LPRM response uncertainty. The impact of the calibration interval is independent of other components of the uncertainty (e.g. cable, amplifier) and a much smaller total LPRM response uncertainty would result if the individual components were statistically combined. Thus, the evaluation concluded that the actual GGNS LPRM response performance is as expected and that an increase in the calibration interval from 1000 MWD/T to 2000 MWD/T is bounded by the uncertainties currently applied to the GGNS licensing basis MCPR safety limit analysis. The current radial bundle power distribution uncertainties used in the GGNS MCPR safety limit analysis of [[ ]] for two-loop operation and [[ ]] for single loop operation remain unchanged.

As with the 1000 MWD/T calibration interval, the TS provisions of SR 3.0.2 would continue to allow the LPRM calibration interval to be considered met if the calibration is performed within 1.25 times the interval specified, as measured from the previous performance. This 25 percent extension would allow the calibration to be performed prior to 2,500 MWD/T. Entergy considers this allowance to remain applicable for the LPRM extended calibration interval. The TS Bases for SR 3.0.2 states that the 25 percent extension is not intended to be used repeatedly, merely as an operational convenience to extend the surveillance interval beyond that specified. This extension is rather intended only to facilitate Surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the Surveillance (e.g., transient conditions or other ongoing Surveillance or maintenance activities). In addition, the LPRM data used in the analysis included cycle exposure intervals of up to 3000 MWD/T.

In summary, the uncertainty associated with the extended LPRM calibration frequency was previously incorporated into the GGNS MCPR safety limit analysis in support of MCPR safety limit changes associated with Cycle 12 operation (approved by the NRC per Reference 4). The uncertainty for the extended LPRM calibration has also been applied to subsequent cycle analyses. To further justify the change in calibration frequency, Entergy, in conjunction with AREVA NP, conducted a GGNS plant specific evaluation of LPRM response performance. The evaluation concluded that the performance was as expected and that the GGNS LPRM response uncertainty was within the values used in the current safety analysis. Therefore, the calibration interval change may be extended without affecting any safety analysis methods, core thermal limits, or current safety analysis results.

5.0 REGULATORY ANALYSIS

5.1 Applicable Regulatory Requirements/Criteria

The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met.

Entergy has determined that the proposed changes do not require any exemptions or relief from regulatory requirements, other than the TS, and do not affect conformance with any General Design Criterion (GDC) differently than described in the Updated Final Safety Analysis Report (UFSAR).

GDC 26, GDC 28, and GDC 29 require reactivity to be controllable such that fuel design limits are not exceeded during normal operation and anticipated operational occurrences (AOOs). The change to the LPRM calibration interval does not adversely affect the current thermal limit analysis nor adversely affect the ability to control reactivity within fuel design limits.

5.2 No Significant Hazards Consideration

Entergy proposes to revise the Grand Gulf Nuclear Station Technical Specifications to extend the surveillance interval of the local power range monitor (LPRM) calibrations from 1000 megawatt-days/metric ton (MWD/T) to 2000 MWD/T. Entergy Operations, Inc. has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

   The extended surveillance interval continues to ensure that the LPRM detectors are adequately calibrated to provide an accurate indication of core power distribution and local power changes. The change will not alter the basic operation of any process variables, structures, systems, or components as described in the safety analyses, and no new equipment is introduced. Hence, the probability of accidents previously evaluated is unchanged.

   The thermal limits established by safety analysis calculations ensure that reactor core operation is maintained within fuel design limits during any Anticipated Operational Occurrence (AOO). The analytical methods and assumptions used in evaluating these transients and establishing the thermal limits assure adequate margins to fuel design limits are maintained. These methods account for various calculation uncertainties including radial bundle power uncertainty which can be affected by LPRM accuracy. Extending the LPRM calibration interval does not impact the existing uncertainties assumed in the GGNS safety analyses. Plant specific evaluation of LPRM sensitivity to exposure has determined that the extended calibration interval does not affect the radial bundle power distribution uncertainty value currently used in the safety analysis. Hence the safety analysis calculations and the associated thermal limits are not affected by the extended LPRM calibration interval and the consequences of an accident previously evaluated are not changed.

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

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

   Response: No.

   The proposed TS amendment will not change the design function, reliability, performance, or operation of any plant systems, components, or structures. It does not create the possibility of a new failure mechanism, malfunction, or accident initiators not considered in the design and licensing bases. Plant operation will continue to be within the core operating limits that are established using NRC approved methods that are applicable to the GGNS design and the GGNS fuel.

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

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

Response: No.

The thermal limits established by safety analysis calculations ensure that reactor core operation is maintained within fuel design limits during any Anticipated Operational Occurrence (AOO). The analytical methods and assumptions used in evaluating these transients and establishing the thermal limits assure adequate margins to fuel design limits are maintained. These methods account for various calculation uncertainties including radial bundle power uncertainty which can be affected by LPRM accuracy. Extending the LPRM calibration interval does not impact the existing uncertainties assumed in the GGNS safety analyses. Plant specific evaluation of LPRM sensitivity to exposure has determined that the extended calibration interval does not affect the radial bundle power distribution uncertainty value currently used in the safety analyses. The thermal limits determined by NRC approved analytical methods will continue to provide adequate margin to fuel design limits

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

~~5.3~~Based on the above, Entergy concludes that the proposed amendment(s) present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.3 Environmental Considerations

The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 PRECEDENCE

The NRC has approved extended LPRM calibration intervals up to 2000 MWD/T for the following Entergy plants.

PLANT NAME	AMENDMENT No.
River Bend Station	107 (Ref. 5)
James A. Fitzpatrick	277 (Ref. 6)
Vermont Yankee	191 (Ref. 7)

The LPRM calibration intervals for these plants were likewise extended due to modern core monitoring systems and improved LPRM detectors which exhibit more consistent sensitivity than older LPRM detectors. The extensions were based upon maintaining the uncertainty in power distribution thermal limits within the limits contained in NRC-approved topical report, NEDO-10958-P-A, "General Electric BWR Thermal Analysis Basis (GETAB) Data, Correlation and Design Application," January 1977. In the case of the GE safety limit analysis methods, the LPRM calibration frequency is dependent upon the added uncertainty in the nodal power distribution not causing the total uncertainty to exceed the 8.7% value allowed by the GETAB safety limit analysis.

Since GGNS uses ATRIUM-10 fuel, the POWERPLEX III core monitoring system, and AREVA NP thermal limit safety analysis methods, the GE total uncertainty limit is not applicable to GGNS. However, the GGNS requested extension of the LPRM calibration interval is also warranted due to use of modern core monitoring systems and improved LPRM detectors. The extension is similarly justified by maintaining the uncertainty in power distribution thermal limits within the values that are currently assumed in the GGNS safety limit analysis using approved AREVA NP methods. The current radial bundle power distribution uncertainty used in the GGNS MCPR safety limit analysis is [[ ]] for two-loop recirculation operation and [[ ]] for single loop operation. Extending the LPRM calibration interval from 1000 MWD/T to 2000 MWD/T does not exceed these uncertainty values.

7.0 REFERENCES

1. EMF-2158(P)(A), "Siemens Power Corporation Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/MICROBURN-B2".

2. XN-NF-80-19(P)(A), Volume 1, "Exxon Nuclear Methodology for Boiling Water Reactors - Neutronic Methods for Design and Analysis".

3. Letter from Mr. H. D. Curet of Siemens power Corporation to Mr. H. J. Richings of USNRC, "POWERPLEX ® Core Monitoring: Failed or Bypassed Instrumentation and Extended Calibration," dated May 6, 1996.

4. Letter from Mr. S. Patrick Sekerak of USNRC to Mr. William A. Eaton of Entergy, "Grand Gulf Nuclear Station, Unit 1 – Issuance of Amendment Re: Revision of the Minimum Critical Power Ratio Safety Limit for Cycle 12 Operation (TAC NO. MB0514)," dated April 26, 2001 (ADAMS accession number ML011230243)

5. Letter from Mr. Robert J. Fretz of USNRC to Mr. Randall K. Eddington of Entergy, "River Bend Station, Unit 1 – Issuance of Amendment Re: Changes to Local Power Range Monitor Calibration Frequency (TAC No. M98883)," dated June 11, 1999 (ADAMS accession number ML021620290).

6. Letter from Mr. Guy S. Vissing of USNRC to Mr. Michael Kansler of Entergy, "James A. Fitzpatrick Nuclear Power Plant – Amendment Re: Regarding Local Power Range Monitor Calibration Frequency (TAC No. MB6945)," dated May 1, 2003 (ADAMS accession number ML030860088).

7. Letter from Mr. Richard P. Croteau of USNRC to Mr. Samuel L. Newton of Vermont Yankee Nuclear Power Corporation, "Vermont Yankee Nuclear power Station – Issuance of Amendment Re: Changes to Local Power Range Monitor Calibration Frequency (TAC No. MA9053)," dated July 18, 2000 (ADAMS accession number ML003733066).

Attachment 5

GNR0-2006/00058

Affidavit for Confidential and Proprietary Information

AFFIDAVIT

STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

1. My name is Jerald S. Holm. I am Manager, Product Licensing, for AREVA NP Inc. and as such I am authorized to execute this Affidavit.

2. I am familiar with the criteria applied by AREVA NP to determine whether certain AREVA NP information is proprietary. I am familiar with the policies established by AREVA NP to ensure the proper application of these criteria.

3. I am familiar with the AREVA NP information contained in the attachments to the Grand Gulf Nuclear Station, Unit 1 license amendment request on the subject "Changes to the Local Power Range Monitor (LPRM) Calibration Frequency" and referred to herein as "Document." Information contained in this Document has been classified by AREVA NP as proprietary in accordance with the policies established by AREVA NP for the control and protection of proprietary and confidential information.

4. This Document contains information of a proprietary and confidential nature and is of the type customarily held in confidence by AREVA NP and not made available to the public. Based on my experience, I am aware that other companies regard information of the kind contained in this Document as proprietary and confidential.

5. This Document has been made available to the U.S. Nuclear Regulatory Commission in confidence with the request that the information contained in this Document be withheld from public disclosure.

6. The following criteria are customarily applied by AREVA NP to determine whether information should be classified as proprietary:

(a) The information reveals details of AREVA NP's research and development plans and programs or their results.

(b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.

(c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for AREVA NP.

(d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for AREVA NP in product optimization or marketability.

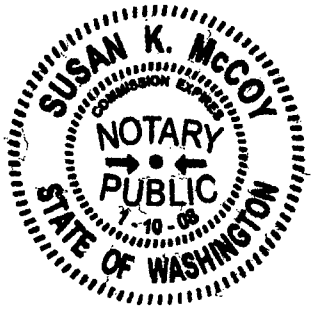
(e) The information is vital to a competitive advantage held by AREVA NP, would be helpful to competitors to AREVA NP, and would likely cause substantial harm to the competitive position of AREVA NP.

7. In accordance with AREVA NP's policies governing the protection and control of information, proprietary information contained in this Document have been made available, on a limited basis, to others outside AREVA NP only as required and under suitable agreement providing for nondisclosure and limited use of the information.

8. AREVA NP policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.

9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

SUBSCRIBED before me this 11
day of July, 2006.



Susan K. McCoy
NOTARY PUBLIC, STATE OF WASHINGTON
MY COMMISSION EXPIRES: 1/10/2008