January 23, 2004

Mr. George A. Williams
Vice President, Operations GGNS
Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION, UNIT 1 - ISSUANCE OF AMENDMENT RE: RESIDUAL HEAT REMOVAL SHUTDOWN COOLING SYSTEM ISOLATION INSTRUMENTATION (TAC NO. MB8939)

Dear Mr. Williams:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 163 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment revises the Technical Specifications (TSs) in response to your original application dated May 12, 2003, as supplemented by letter dated December 5 and supplemented by letter dated December 18, 2003.

The amendment changes TS 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," to add a provision to the APPLICABILITY function in TS Table 3.3.6.1-1 that will eliminate the requirement that the Primary Containment and Drywell Isolation Instrumentation for Residual Heat Removal Shutdown Cooling System Isolation, in the Function 5.b, Reactor Vessel Water Level-Low, Level 3, be OPERABLE under certain conditions during refueling mode, MODE 5. In addition, the amendment adds a new surveillance requirement 3.3.6.1.9 to verify every four hours that the water level in the upper containment pool is greater than or equal to 22 feet 8 inches above the reactor pressure vessel flange.

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Bhalchandra Vaidya, Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures: 1. Amendment No. 163 to NPF-29
2. Safety Evaluation

cc w/encls: See next page

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ENTERGY OPERATIONS, INC.

SYSTEM ENERGY RESOURCES, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

ENTERGY MISSISSIPPI, INC.

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 163
License No. NPF-29

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

   A. The application for amendment by Entergy Operations, Inc. (the licensee) dated May 12, 2003, as revised by letter dated December 5 and supplemented by letter dated December 18, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

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

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

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

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

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-29 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 163, are hereby incorporated into this license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by D. Jaffe Acting for/

Robert A. Gramm, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: January 23, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 163

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
3.3-53	3.3-53
-----	3.3-53a
3.3-58	3.3-58

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 163 TO

FACILITY OPERATING LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By application dated May 12, 2003, as supplemented by letter dated December 5 and supplemented by letter dated December 18, 2003, Entergy Operations, Inc. (Entergy or the licensee) submitted an application for amendment to Grand Gulf Nuclear Station, Unit 1 (GGNS) Technical Specification (TS) 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," to add a provision to the APPLICABILITY function that will eliminate the requirement that the Residual Heat Removal (RHR) Shutdown Cooling (SDC) System Isolation, in the Reactor Vessel Water Level-Low, Level 3 function be OPERABLE under certain conditions during Refueling Mode, MODE 5, and to add a new surveillance requirement (SR) 3.3.6.1.9. The original application was submitted by letter dated May 12, 2003. The May 12, 2003, application was previously noticed in the *Federal Register* on June 10, 2003 (68 FR 34665). A supplemented was submitted by letter dated December 5, 2003, and was noticed in the *Federal Register* on December 15, 2003 (68 FR 69726).

A second supplemental letter dated December 18, 2003, provided clarifying information that did not change the scope of the December 15, 2003, *Federal Register* notice or the no significant hazards consideration determination.

Specifically, the proposed changes would remove the requirement for the RHR, SDC isolation in the Function 5.b, Reactor Vessel Water Level-Low, Level 3 (Level 3), specified in TS Table 3.3.6.1-1, when the upper containment reactor cavity is at the High Water Level (HWL) condition which corresponds to 22 feet - 8 inches above the reactor pressure vessel (RPV) flange specified in TS 3.5.2, “Emergency Core Cooling Systems (ECCS) Shutdown”; would add a new SR 3.3.6.1.9 to verify every four hours that the water level in the upper containment pool is greater than or equal to 22 feet 8 inches above the RPV flange when the RHR SDC System isolation instrumentation is not OPERABLE under Table 3.3.6.1-1, Function 5.b, MODE 5; and would add a footnote to Table 3.3.6.1-1, Function 5.b, MODE 5 that states that the isolation instrumentation operability requirement for the function is “Not applicable when the upper containment reactor cavity and transfer canal gates are removed, and SR 3.3.6.1.9 is met.” The proposed SR and footnote are only applicable in MODE 5. The requirements for cavity gate, transfer gate, and water level match with those for ECCS operability specified in TS 3.5.2 for MODE 5.

The proposed changes would allow various surveillance requirements and other outage activities to be completed efficiently during refueling by eliminating the risk associated with an unintended or spurious isolation from these activities that would result in a loss of the SDC function.

2.0 REGULATORY EVALUATION

The NRC staff finds that the licensee in Attachment 1, Section 5 of its revised application dated December 5, 2003, identified the applicable regulatory requirements and guidance. The regulatory requirements and guidance on which the staff based its acceptance are:

1. The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36, "Technical specifications," establish the requirements for TSs. 10 CFR 50.36(c)(2)(ii) states the criteria for establishing TS limiting conditions for operation (LCOs) for a nuclear reactor.

2. The regulations in 10 CFR 50.59, “Changes, tests, and experiments,” 10 CFR 50.120, “Training and qualification of nuclear power plant personnel,” 10 CFR Part 55, “Operators’ Licenses,” and 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 19, “Control room,” as they pertain to the human factors related to the ability of the plant operations personnel to detect and manually terminate an inadvertent draindown event.

3. The regulations in 10 CFR Part 50, Appendix A, GDC-55, “Reactor coolant pressure boundary penetrating containment,” and the regulations in 10 CFR Part 50, Appendix A, GDC-56, “Primary containment isolation,” specify requirements for isolation valves for lines penetrating the reactor coolant pressure boundary and/or primary reactor containment.

4. The regulations in 10 CFR 50.90, "Application for amendment of license or construction permit," 10 CFR 50.91, "Notice for public comment; State consultation," and 10 CFR 50.92, "Issuance of amendment," establish the requirements for amendments to the operating license and no significant hazards consideration determination.

5. The NRC staff also made use of applicable guidance in the Standard Review Plan (SRP), Sections SRP 13.2.1, SRP 13.2.2, SRP 13.5.2.1, SRP 18.0, and Generic Letter (GL) 82-33, “Supplement 1 to NUREG-0737- Requirements for Emergency Response Capability”, and NUREG-1434, “Standard Technical Specifications, General Electric Plants, BWR [Boiling Water Reactor]/6."

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses, in support of its proposed license amendment, which are described in Attachment 1, Sections 3 and 5 of the licensee's submittal. The detailed evaluation below will support the conclusion that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

3.1 Evaluation of the Proposed Changes and the Previous Amendment No. 70

TS Section 3.3.6.1 LCO requires, among other things, that the low reactor water level instrumentation (Level 3) and isolation logic associated with the RHR SDC system isolation be operable at all times in MODE 5 (Item 5b in Table 3.3.6.1-1). The instrumentation operability supports an operability requirement for the capability to automatically isolate the containment isolation valves, 1E12F008 and 1E12F009, required by TS 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)."

In conjunction with licensing actions for the Alternate Decay Heat Removal System (ADHRS), the requirement for operability of the RHR SDC system isolation function in the Reactor Vessel Water Level-Low, Level 3 function was added to the GGNS TSs by Amendment No. 70. The ADHRS was designed and built to supplement the RHR SDC mode during MODE 4, “Cold Shutdown,” and MODE 5, “Refueling.” The requirements for this function was subsequently added generically to NUREG-1434. The requirements for this function formed a basis for the NRC staff approval of GGNS License Amendment No. 70 which addressed the topic of ADHRS SDC. Amendment No. 70 added TS administrative controls for use of the ADHRS, automatic isolation of the reactor vessel, and automatic injection of water into the vessel. In addition, in the staff safety evaluation for the ADHRS, Amendment No. 70, the NRC staff specifically gave credit for the Level 3 isolation.

However, the proposed changes deviate from the NUREG-1434 requirements for the RHR isolation function during HWL, based on a plant-specific evaluation. The NRC staff requested the licensee to confirm whether the ADHRS will be in operation during MODE 5 with HWL, and to clarify if there may be conflict in the operating conditions for the ADHRS and MODE 5 operation with HWL, 22 feet-8 inches above the RPV flange.

The licensee responded in their supplement dated December 18, 2003, that the RHR isolation function simply supports actions to ensure that the RPV water level does not drop below the top of the active fuel during a vessel draindown event through valves 1E12F008 and 1E12F009 (i.e., pipe break or inadvertent valve opening) in the RHR SDC system. This function works in conjunction with the ECCS to mitigate reactor vessel draindown events through all drainage paths. The NRC staff’s concern when the ADHRS was added centered on operability of an ECCS that could be manually re-aligned to inject water from the suppression pool, in the event of a draindown event. The draindown events evaluated by Entergy included all possible drain paths, including the RHR SDC flow path. During that evaluation, Entergy recognized that some draindown scenarios could not meet the 20 minute response time criterion developed based on the licensee’s analysis of a draindown, to manually re-align an ECCS. Therefore, Entergy requested that the Level 3 RHR SDC isolation be added to the TS. When added, the isolation function included all of MODE 5 to bound the worst case condition (low water level). The requested changes in the current application essentially segregate out the HWL condition during MODE 5 and demonstrate why the isolation is not needed in this condition. No administrative controls for use of the ADHRS or automatic injection of water into the vessel are affected by the proposed changes. Thus, the operation of ADHRS in MODE 5 during HWL conditions is not affected.

The NRC staff concludes that this response is acceptable.

3.2 Evaluation of the Proposed Changes and the Plant Operational Condition, MODE 5

The proposed changes eliminate the requirement for the automatic isolation capability of 1E12F008 and 1E12F009 closure on Level 3, provided the upper containment reactor cavity and transfer canal gates are removed, water level is greater than or equal to 22 feet 8 inches over the top of the RPV flange, i.e.,HWL, and the plant is in MODE 5. In addition, Entergy proposed a new SR to verify every four hours that the water level in the upper containment pool is greater than or equal to 22 feet 8 inches above the RPV flange when the RHR SDC system isolation instrumentation is not OPERABLE under Table 3.3.6.1-1, Function 5.b, MODE 5. Operability requirements for ECCS are not affected by the proposed changes, because the protective actions are expected to occur well before ECCS initiation.

The basis for the MODE 5 ADHRS requirements is that the water inventory available to be lost through any given drain path can vary significantly. With the reactor cavity drained and water level below the reactor vessel flange elevation, a draindown event could lead to a low water level (Level 3) condition in a relatively short time. Since this configuration is more limiting than with the reactor cavity flooded, this was used to evaluate draindown events as part of the licensing actions for the ADHRS. As a result of this evaluation and as part of the ADHRS changes to the GGNS TS, Entergy requested and received (Amendment 70, Dated September 24, 1990), the TS changes that added the current requirement for an automatic isolation of the SDC suction line.

In the analyses supporting the Amendment 70, ADHRS changes, various flow paths were evaluated assuming a draindown event is initiated by a single operator error or equipment malfunction. Note that these analyses considered the initial operator awareness of a draindown event at the level - low, Level 3 alarm. Several drain paths were eliminated since they were essentially self-limiting; that is, the event would terminate without any actions based only on the associated piping configuration (e.g., drain paths through the feedwater lines). Other flow paths were eliminated since they required either multiple operator errors to establish or the error was determined to be not credible, given the plant configuration, administrative barriers, and normal operating practices. Several potential drain and pump-down paths with relative low flow rates were deemed acceptable with no credit for automatic isolation. This is based on the criterion that operators had greater than 20 minutes to isolate the drain path and realign ECCS and inject into the reactor vessel after detection by the control room, of the inventory loss at Level 3. The remaining drain paths would satisfy the criterion only by crediting the Level 3 automatic SDC isolation. Hence, the requirement for automatic isolation of the SDC flow path was requested.

The flow path relying on the Level 3 isolation with the highest flow rate is a pump-down path from the reactor vessel to the suppression pool via the minimum flow line. This flow path takes suction from the reicrculation loop through 1E12F008 and 1E12F009, and discharges through the RHR minimum flow path to the suppression pool. The flow path is created if the RHR minimum flow valve (1E12F064 A/B) fails to close during startup of the SDC loop. The flow rate through this flow path was determined to be 1435 gallons per minute (gpm) with the initial water level at the reactor vessel flange.

As stated before, the water inventory available that could be lost through any given draindown or pump-down path from HWL can vary significantly during MODE 5. With no mitigating actions and the reactor cavity flooded, the limiting pump-down event with pump-down path from

RPV to suppression pool via RHR minimum flow line, as described above, would take considerable time to reach the Level 3 isolation setpoint. Building on the draindown analysis performed for Amendment No. 70 discussed in Section 3.1, with the upper containment reactor cavity at the HWL, the flow rate for the same flow path through the RHR Minimum Flow Line would be approximately 1450 gpm. Accounting for the additional water inventory available with these pools flooded and the gates removed, an inventory loss of 1450 gpm would not reduce the pool level to the reactor flange for approximately 4½ hours. If the inventory associated with an equivalent loss of level took credit for adjoining pools in the auxiliary building, the time would be significantly longer. Given this extended period for operator detection and response to a draindown event, sufficient time is available before reaching the automatic isolation setpoints previously associated with Level 3, and for operations personnel to take action to reenergize and close either the E12F008 or 1E12F009 valves or to terminate the inventory loss by other means (e.g., closing the RHR minimum flow valve) prior to uncovering fuel. To enhance the ability of operations personnel to detect inventory loss associated with a draindown event, an upper containment pool SR is proposed.

Several methods are readily available to identify an event where significant inventory is being lost. These include the following:

- The Fuel Pool Drain tank level is monitored and alarms on low level in the drain tank. This would be one of the primary means to identify a loss of inventory, providing an early alarm.

- With the large contingent of people on the refuel floor (fuel movers, reactor engineers, senior reactor operators) during refueling outages, it is reasonable to expect that the falling water level in the pools would be noticed well before it reaches the vessel flange, and that the control room would be notified.

- Although periodically defeated for maintenance, surveillances, etc., undervessel sumps are equipped with an alarm function, and a large influx of water would cause the alarms to annunciate.

- Assuming irradiated fuel is stored in the upper pool, a loss of level would cause Area Radiation Monitor Alarms to activate at 15 milli-rem.

- The reactor vessel HWL alarm clears at 56 inches, indicating inventory loss and notifying operators.

The availability of diverse methods described above to recognize that a draindown event has occurred and the relatively long period of time available to respond to such an event is consistent with the GGNS licensing basis to terminate a draindown event. An additional evaluation by the licensee supporting this change established that the RHR system automatic isolation was not needed to mitigate a draindown event, given the possible drain paths and the time available for operators to terminate the draindown event.

As discussed in the BASES for TS 3.5.2, "ECCS —Shutdown," draindown events in MODE 5 with the reactor cavity flooded to HWL, are not a concern since the condition “provides sufficient coolant inventory to allow operator action to terminate the inventory loss prior to fuel uncovery in case of an inadvertent draindown.” As discussed above, this capability continues to

be the case without the RHR SDC suction flow path Level 3 isolation function. As a result, inoperability of the RHR SDC suction flow path automatic isolation, in itself, is not a condition where a draindown event could create the potential for the release of fission products.

Since radiological releases are not postulated to occur due to the large water inventory and manual isolation capability, the NRC staff finds it acceptable that additional systems used to mitigate radiological releases, such as those utilized during operations with an increased potential for draining the reactor vessel, need not be invoked during this condition.

3.3 Operation with the Potential for Draining the Reactor Vessel (OPDRV)

The NRC staff requested the licensee to address the concern that the condition with the RHR SDC Reactor Water Level-Low, Level 3 isolation disabled might create an operation with the potential for draining the reactor vessel (OPDRV) condition without the automatic protective action in TS.

The licensee responded that the automatic isolation function essentially protected all of MODE 5 OPDRV conditions by bounding the worst case condition (Level 3). At the time of the initial application on May 12, 2003, the inoperability of the low water level SDC isolation constituted an OPDRV as defined in the GGNS Technical Requirements Manual (TRM). As discussed above, licensee analysis for the HWL condition during MODE 5 established that the RHR system automatic isolation was not needed to mitigate a draindown event with the reactor cavity flooded. At HWL, additional inventory of over 400,000 gallons of water is available, which gives the operators over 4½ hours to detect and mitigate the loss of inventory during the postulated worst case draindown event prior to reaching the reactor vessel flange. Therefore, the proposed change, in itself, is not a condition that would result in the release of fission products. Since radiological releases are not postulated to occur, additional systems used to mitigate releases (such as those utilized during operations with an increased potential for draining the reactor vessel) are not required during this condition. Subsequent to the initial application dated May 12, 2003, the OPDRV definition was revised in the TRM under the provisions of 10 CFR 50.59 to reflect the results of this analysis and to reflect the analysis of draindown events through all flow paths that could potentially drain the reactor vessel. The revised definition also credits the advantages of the large water inventory available during the HWL condition for mitigating draindown events. Using this revised definition, inoperability of the RHR SDC flow path automatic isolation does not constitute an OPDRV condition at the HWL condition. This conclusion is consistent with the BASES for TS 3.5.2, “APPLICABLITY”, that draindown events in MODE 5 with the reactor cavity flooded are not a concern (i.e., ECCS is not required) since the HWL condition ". . . provides sufficient coolant inventory to allow operator action to terminate the inventory loss prior to fuel uncovery in case of an inadvertent draindown." As outlined above, this capability continues to be available without the SDC suction flow path Level 3 isolation function.

The NRC staff concludes that this response is acceptable.

3.4 Non-Class 1E Control Room Alarm Annunciators

The NRC staff requested the licensee to address the concerns that the Control Room alarm annunciators are not Class 1E qualified, the proposed changes rely on operator actions based on alarms as initiating information, availability of qualified instrumentation, and the procedures

to monitor the instruments to ensure proper and timely operator actions when reactor cavity water level is lowered when a draindown event occurs from HWL condition during MODE 5.

The licensee responded that the Control Room alarm annunciators are not Class 1E; however, the instrumentation (e.g., switches and transmitters) associated with the alarms are safety-related and classified as Seismic Category 1. Entergy periodically establishes the functionality of these alarms. Additionally, Entergy has proposed to verify the upper containment pool level every 4 hours, when RHR SDC isolation instrumentation is de-activated in MODE 5, and the upper containment reactor cavity and transfer canal gates are removed, to further enhance operations personnel capability to detect an inventory loss.

Entergy described several methods that are readily available to identify an event where significant water inventory is being lost during a refuel outage. At HWL conditions, with the upper reactor cavity flooded, the alarms delineated below will annunciate if a draindown event occurs.

1. Fuel Pool Drain Tank Level Low:

   This level alarm (Fuel Pool Drain Tank Level Low) is annunciated on the Main Control Room panel 1H13-P680, at location P680-4A2-D6. This is not a direct pool level monitoring alarm, but it is a Fuel Pool Cooling and Cleanup (FPCCU) system drain tank level alarm. As such, it is often more sensitive to level changes than a direct fuel pool level monitor. The system operation of the FPCCU system has the upper pool water levels maintained by overflowing the skimmers into the drain tank, where the FPCCU pumps take suction. The normal water level is at an approximate elevation of 207 feet 10 inches. The elevation corresponding to the 22 feet 8 inches (minimum level) required by proposed SR 3.3.6.1.9 is 207 feet 7 inches. A pool level drop of a few inches would cause the drain tank level alarm to annunciate within minutes.

2. Fuel Pool Drain Tank Level Low-Low:

   This level alarm (Fuel Pool Drain Tank Level Low-Low) is annunciated on the Main Control Room panel 1H13-P680, at location P680-4A2-C7. In addition to the low level alarm described in Item 1 above, this alarm alerts the control room operators to a trip condition for the FPCCU pumps on the loss of level in the drain tank.

3. Fuel Pool Level Trouble:

   This level alarm (Fuel Pool Level Trouble) is annunciated on the Main Control Room panel 1H13-P680, at location P680-4A2-A6. This alarm annunciates when the upper pool level drops approximately 0.33 feet below normal operating level. This is a direct indication of Fuel Pool level, and indicates that either a high or low level condition exists (it also alarms on high pool level).

Entergy is going to revise the applicable Alarm Response Instructions (ARI) for the above-listed alarms to indicate a loss of water from the Upper Containment Pool as a new “possible cause” for the alarm.

The NRC staff concludes that this response is acceptable.

3.5 Human Factors Evaluation

In its original submittal of May 12, 2003, Entergy described the worst case draindown condition of 1450 gpm as taking approximately 4½ hours to reduce the pool level to the reactor flange. This is more than sufficient time for operators to manually close the E12F008 or E12F009 valves or to terminate the inventory loss by other means (e.g., closing the RHR minimum flow valve) prior to uncovering the fuel, assuming that the loss of inventory is detected. The primary method of detection was identified as any one of approximately, five alarms. Entergy also indicated that a large contingent of people would be on the refuel floor during refueling outages, and it is reasonable to expect that falling water level in the pools would be noticed well before it reaches the vessel flange. The TS SR 3.9.6.1 requires that the licensee perform the surveillance to verify the upper containment pool level every 24 hours during the movement of irradiated fuel. However, the licensee conducts the surveillance to verify water level in the upper containment pool every 12 hours under the licensee's administrative controls.

The NRC staff's concern was that the alarms are not safety grade equipment and cannot be depended upon to function properly. Since the worst case draindown would take a minimum of 4½ hours, Entergy agreed to add a new SR 3.3.6.1.9 to increase the TS SR frequency for upper containment pool level to every 4 hours to verify that the water level in the upper containment pool is greater than or equal to 22 feet 8 inches above the RPV flange when the RHR SDC System isolation instrumentation is not OPERABLE under Table 3.3.6.1-1, Function 5.b, MODE 5. This will enhance the ability of operations personnel to detect a potential inventory loss with sufficient time to perform a mitigating action. All other methods of level loss detection as described above would still be available.

The NRC staff concludes that this response is acceptable.

3.6 Past Isolation Occurrences and Responses

The NRC staff requested the licensee to provide information regarding past isolation occurrences and the licensee's responses to these events. The licensee has indicated that the occurrence of actuating the isolation logic, causing one or both of the RHR SDC isolation valves to automatically close, is "infrequent and recoverable." GGNS has experienced several automatic isolations of the RHR SDC system; none due to a valid isolation signal. Since 1986, there have been nine instances of a spurious isolation of the RHR SDC valve isolation logic at GGNS, the last two of which occurred in 1993. The predominant cause of these isolations was human error, such as inadvertently grounding a circuit or lifting the wrong control power lead. GGNS has exercised greater care in the scheduling of the surveillances and the tasks that have a potential to impact the RHR SDC isolation valve logic. Also, corrective actions to prevent recurrence have included improving human performance using procedural tools such as peer checks, better procedural guidance, and increased awareness of risks. A review of industry data indicates several instances of a loss of RHR SDC occurring since the year 2000. The GGNS search results indicate that inadvertent actuation of the RHR SDC isolation logic causes loss of the decay heat removal system for a short period of time. However, the GGNS search results identified no instances of isolation due to a valid actuation signal. This data indicates that the industry continues to experience spurious isolations of the RHR SDC valves.

The NRC staff concludes that this response is acceptable.

3.7 Conclusion of Technical Evaluation

Entergy described the worst case draindown condition as taking approximately 4½ hours to reduce the pool level to the reactor flange. The staff has reasonable assurance that, by increasing the surveillance frequency required by the TS for verifying the upper containment pool level from every 24 hours to every 4 hours to enhance the ability of operations personnel to detect a loss of inventory, adequate time is available for operator action to detect and mitigate an inadvertent vessel draindown event prior to fuel uncovery when the RHR SDC System isolation instrumentation is not OPERABLE under Table 3.3.6.1-1, Function 5.b, MODE 5.

Based on its review of the licensee's submittal, as revised, and its response to the request for additional information, the NRC staff finds that the licensee's proposed changes to eliminate the requirement that the RHR SDC System Isolation, Reactor Vessel Water Level-Low, Level 3 function, be OPERABLE when the upper containment reactor cavity is at the HWL condition specified in TS 3.5.2, and the upper containment reactor cavity and transfer canal gates are removed, are acceptable.

However, if the containment reactor cavity level should become less than 22 feet 8 inches, or the upper containment reactor cavity or transfer canal gates are installed, the proposed changes to remove the RHR System Isolation are not acceptable; thus, RHR System Isolation Instrumentation, Reactor Vessel Water Level – Low, Level 3 must be OPERABLE.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Mississippi State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (68 FR 34665). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: T. Ford
R. Eckenrode

Date: January 23, 2004

cc:

Executive Vice President
& Chief Operating Officer
Entergy Operations, Inc.
P. O. Box 31995
Jackson, MS 39286-1995

Wise, Carter, Child & Caraway
P. O. Box 651
Jackson, MS 39205

Winston & Strawn
1400 L Street, N.W. - 12th Floor
Washington, DC 20005-3502

Chief
Energy and Transportation Branch
Environmental Compliance and
Enforcement Division
Mississippi Department of Environmental
Quality
P. O. Box 10385
Jackson, MS 39289-0385

President
Claiborne County
Board of Supervisors
P. O. Box 339
Port Gibson, MS 39150

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

Senior Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 399
Port Gibson, MS 39150

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

Attorney General
Department of Justice
State of Louisiana
P. O. Box 94005
Baton Rouge, LA 70804-9005

State Health Officer
State Board of Health
P. O. Box 1700
Jackson, MS 39205

Office of the Governor
State of Mississippi
Jackson, MS 39201

Attorney General
Asst. Attorney General
State of Mississippi
P. O. Box 22947
Jackson, MS 39225

Vice President, Operations Support
Entergy Operations, Inc.
P.O. Box 31995
Jackson, MS 39286-1995

Director
Nuclear Safety Assurance
Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

Mr. Michael A. Krupa, Director
Nuclear Safety & Licensing
Entergy Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213-8298