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GNRO-2004/00062

December 17, 2004

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

SUBJECT: License Amendment Request
Containment Air Lock Leak Rate Test Acceptance Criteria
Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. NPF-29

- REFERENCES:
1. Letter from USNRC to Mr. Joseph J. Hagan, Grand Gulf Nuclear Station, Unit 1 – Issuance of Amendment RE: 10 CFR Part 50, Appendix J, Option B (TAC No. M99879), dated April 6, 1998
 2. Letter GNRO-97/00103 from Mr. Joseph J. Hagan to USNRC, Grand Gulf Nuclear Station, Unit 1 - License Amendment Request, Adoption of Option B of 10 CFR50, Appendix J

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 revise the air lock surveillance test acceptance criteria to be consistent with the NRC approved Industry Technical Specification Task Force (TSTF) change to the Standard Technical Specifications (STS), TSTF-52, entitled "Implement 10 CFR 50, Appendix J, Option B." By letter dated April 6, 1998 the NRC Staff issued amendment number 135 to the GGNS license permitting the implementation of the containment leak rate testing provisions of 10 CFR Part 50, Appendix J, Option B. Entergy requests changes to Section 3.6.1.2, "Primary Containment Air Locks" of the Technical Specification (TS) to be consistent with portions of TSTF-52.

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. The proposed change includes no new commitment.

Entergy requests approval of the proposed amendment by August 1, 2005. Once approved, the amendment shall be implemented within 60 days. Although this request is neither exigent nor emergency, your prompt review is requested.

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If you have any questions or require additional information, please contact Matt Crawford at 601-437-2334.

I declare under penalty of perjury that the foregoing is true and correct. Executed on December 17, 2004.

Sincerely,



GAW/MLC/amt

Attachments:

1. Analysis of Proposed Technical Specification Change
2. Proposed Technical Specification Changes (mark-up)
3. Changes to Technical Specification Bases Pages

cc: NRC Senior Resident Inspector
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Port Gibson, MS 39150

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Attachment 1

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Analysis of Proposed Technical Specification Change

1.0 DESCRIPTION

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

Entergy requests changes to Section 3.6.1.2, "Primary Containment Air Locks" of the Technical Specification (TS), Appendix A of the Operating License. Specifically, the proposed change will revise the containment air lock leakage rate testing acceptance criteria performed in accordance with Surveillance Requirement (SR) 3.6.1.2.1. The proposed change is based on NRC approved Industry / Technical Specification Task Force (TSTF) Traveler #52 and adopts the acceptance criteria specified in the industry approved Improved Standard Technical Specifications.

2.0 PROPOSED CHANGE

TS Limiting Condition for Operation (LCO) 3.6.1.2 "Primary Containment Air Locks" governs the operability requirements for the two primary containment air locks. The air locks are required to be operable in plant Modes 1 (Run), 2 (Startup), and 3 (Hot Shutdown). Currently the air locks are required to be leak rate tested by TS 3.6.1.2 Surveillance Requirements (SRs) in accordance with the 10 CFR 50 Appendix J, Testing Program. The proposed changes will modify the air lock testing acceptance criteria.

Specifically, Entergy proposes to change the acceptance criteria of:

1. the overall air lock leakage rate from ≤ 2 scfh specified in SR 3.6.1.2.1.a to $\leq 0.05 L_a$ (currently equivalent to ≤ 23.7 scfh) and
2. the leakage rate for each containment air lock door specified in SR 3.6.1.2.1.b from ≤ 2 scfh to $\leq 0.01 L_a$ (currently equivalent to ≤ 4.74 scfh) as is currently approved in the Improved Standard TSs.

No changes are proposed to the maximum allowable primary containment leakage rate, L_a , assumed in the GGNS radiological analyses.

In summary, Entergy is proposing to adopt the containment air lock leakage rate specified as a percentage of the overall primary containment leakage rate in the Improved Standard TSs rather than the absolute leakage rate currently specified in the GGNS TSs.

Changes to the TS Bases associated with the proposed changes to SR 3.6.1.2.1 are provided in Attachment 3 for your information only.

3.0 BACKGROUND

By letter dated August 13, 1993, as supplemented by letters dated April 15, May 11, June 24, and July 20, 1994 and April 18, 1995, Entergy Operations, Inc., (EOI) applied for an exemption to the requirements of 10 CFR 50, Appendix J. The Staff agreed to review the GGNS proposal in support of proposed rulemaking that would revise Appendix J to allow licensees the option of a performance-based approach to containment leak rate testing. The NRC granted GGNS an exemption on April 26, 1995, to permit the selection of containment leakage rate testing intervals for components on the basis of performance.

The NRC subsequently (September 26, 1995) issued a revised 10 CFR 50 Appendix J, to allow licensees to adopt Option B (performance-based testing requirements) by submitting an implementation plan and requesting a revision to the Technical Specifications (TS). By letter dated April 6, 1998, the Nuclear Regulatory Commission issued Amendment 135 to the GGNS Operating License to permit implementation of the containment leak rate testing provisions of 10 CFR Part 50, Appendix J, Option B in accordance with the April 26, 1995, exemption and the associated NRC Staff Safety Evaluation Report. Industry implementation of TSTF 52 relocated the acceptance criteria to the Administrative section of the TS, whereas for GGNS the criteria remains in the TS LCO Surveillance section.

4.0 TECHNICAL ANALYSIS

The primary containment air locks form part of the primary containment pressure boundary. As such, air lock integrity and leak tightness are essential for maintaining primary containment leakage rate to within limits in the event of a Design Basis Accident (DBA). Not maintaining air lock integrity or leak tightness may result in a leakage rate in excess of that assumed in the design basis radiological analysis.

The DBA that postulates the maximum release of radioactive material within primary containment is a LOCA. In the analysis of this accident, it is assumed that primary containment is OPERABLE, such that release of fission products to the environment is controlled by the rate of primary containment leakage. The primary containment is designed with a maximum allowable leakage rate (L_a) of 0.682% by weight of the containment and drywell air per 24 hours at the calculated maximum peak containment pressure (P_a) of 11.5 psig. Since no changes are proposed to the maximum allowable leakage rate, the design basis radiological analysis is not impacted by this change.

The primary containment allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air locks. The periodic containment air lock leakage rate tests specified in SR 3.6.1.2.1 verifies that the air lock leakage does not exceed the allowed fraction of the overall primary containment leakage rate. The current air lock leakage acceptance criteria were established during initial air lock and primary containment OPERABILITY testing.

As described in Section 3 above, 10 CFR 50 Appendix J, now allows licensees to adopt Option B (performance-based testing requirements). The GGNS Option B program was developed prior to the issuance of industry guidance provided in TSTF 52. In finalizing the wording of the TSTF, one item was incorporated that is not reflected in the GGNS TS. This pertains to the change in acceptable leakage rate for the primary containment. The proposed change is to incorporate the change that was not approved at the time of the GGNS submittals.

The proposed change is to adopt a containment air lock leakage rate specified as a percentage of the overall primary containment allowable leakage rate (L_a) versus a leakage rate based on the original containment testing over 15 years ago. The performance criterion of the Appendix J program will be maintained since the air lock leakage rates at accident pressure will be combined with other containment leakages to produce a sum of leakage that must be demonstrated to be less than L_a .

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.)

5.2 No Significant Hazards Consideration

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.

Primary containment air lock leak rate testing can have no effect on the probability of any postulated accident. The proposed change will increase the allowed containment air lock leakage rate and convert it from an absolute leakage rate to a percentage of the overall primary containment leakage rate. No change to the overall leakage rate of the containment is being proposed, therefore there is no change to the consequences of any postulated accident. The change in air lock leakage rate will not impact the design or operation of any plant system or component nor will they affect initiation or mitigation of any accidents previously analyzed.

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 primary containment air locks form part of the primary containment pressure boundary. The periodic containment air lock leakage rate tests specified in SR 3.6.1.2.1 verifies that the air lock leakage does not exceed the allowed fraction of the overall primary containment leakage rate. This request involves a change in the allowable leakage rate of the primary containment air locks without increasing the overall allowed leakage rate of the containment. Changing the allowable leakage rate has no influence on, nor does it contribute in any way to, the possibility of a new or different kind of accident or malfunction from those previously analyzed. There will be no effect on the types and amounts of overall leakage from the primary containment boundary. The proposed amendment will not produce any changes to the design or operation of the plant. The method of performing the test is not changed. No new accident modes are created by

changing the allowable leakage in this manner. No safety-related equipment or safety functions are altered as a result of this change.

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.

Air lock integrity and leak tightness are essential for maintaining primary containment leakage rate to within limits in the event of a design basis accident. The periodic containment air lock leakage rate tests verify that the air lock leakage does not exceed the allowed fraction of the overall primary containment leakage rate. Since no changes are proposed to the maximum allowable primary containment leakage rate, the design basis radiological analysis is not impacted by this change. The license amendment request removes unnecessary conservatism from the testing program and allows consistency with current industry practice. Since no changes are proposed to the maximum allowable primary containment leakage rate, the design basis radiological analysis is not impacted by this change.

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

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 proposed primary containment air lock leak rate testing criteria is consistent with the criteria provided in the Improved Standard TS, NUREG-1434.

Attachment 2

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Proposed Technical Specification Changes (mark-up)

Primary Containment Air Locks
3.6.1.2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.2.1 -----NOTES-----</p> <ol style="list-style-type: none"> 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria of SR 3.6.1.1.1 in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. <p>-----</p> <p>Perform required primary containment air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.</p> <p>The acceptance criteria for air lock testing are:</p> <ol style="list-style-type: none"> a. Overall air lock leakage rate is ≤ 2 scfh when tested at $\geq P_a$. b. For each door, leakage rate is ≤ 2 scfh when the gap between the door seals is pressurized to $\geq P_a$. 	<p>In accordance with 10 CFR 50, Appendix J, Testing Program</p> <p>$\leq 0.05 L_a$</p> <p>$\leq 0.01 L_a$</p>
<p>SR 3.6.1.2.2 Verify primary containment air lock seal air flask pressure is ≥ 90 psig.</p>	<p>7 days</p>

(continued)

Attachment 3

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**Changes to Technical Specification Bases Pages
For Information Only**

BASES

ACTIONS D.1 and D.2 (continued)

does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS SR 3.6.1.2.1

Maintaining primary containment air locks OPERABLE requires compliance with the leakage rate test requirements of 10 CFR 50, Appendix J (Ref. 2), as modified by approved exemptions. This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The leakage rate testing requirements include the airlock test connection valves (Type C leakage tests). The acceptance criteria were established during initial air lock and primary containment OPERABILITY testing. The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall primary containment leakage rate.

The SR has been modified by two Notes. Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR, requiring the results to be evaluated against the acceptance criteria of SR 3.6.1.1.1. This ensures that air lock leakage is properly accounted for in determining the overall primary containment leakage rate. Since the overall primary containment leakage rate is only applicable in MODES 1, 2, and 3 operation, the Note 2 requirement is imposed only during these MODES.

SR 3.6.1.2.2

The seal air flask pressure is verified to be at ≥ 90 psig every 7 days to ensure that the seal system remains viable. It must be checked because it could bleed down during or

(continued)