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G3NO-2008-00025

December 3, 2008

U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attention: Document Control Desk

DOCKET: No. 52-024

SUBJECT: Responses to NRC Requests for Additional Information, Letter No. 21 (GG3 COLA)

REFERENCE: NRC Letter to Entergy Nuclear, *Request for Additional Information Letter No. 21 Related to the SRP Section 09.05.01 for the Grand Gulf Combined License Application*, dated November 10, 2008 (ADAMS Accession No. ML083120532).

Dear Sir or Madam:

In the referenced letter, the NRC requested additional information on two items to support the review of certain portions of the Grand Gulf Unit 3 Combined License Application (GG3 COLA). The responses to the following Requests for Additional Information (RAIs) in the referenced letter are provided in Attachments 1 and 2 to this letter as follows:

1. RAI Question 09.05.01-1, Fire water storage tank water supply

2. RAI Question 09.05.01-2, Fire hazards analysis

Should you have any questions, please contact me or Mr. Tom Williamson of my staff. Mr. Williamson may be reached as follows:

Telephone: (601) 368-5786

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E-Mail Address: twilli2@entergy.com

This letter contains commitments as identified in Attachment 3.

D088
NRO

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

Executed on December 3, 2008.

Sincerely,

WKH/ghd

Attachments:
1. Response to RAI Question No. 09.05.01-1
2. Response to RAI Question No. 09.05-01-2
3. Regulatory Commitments

cc (e-mail unless otherwise specified):

NRC

NRC Project Manager – Grand Gulf Unit 3 COLA
NRC Project Manager – North Anna Unit 3 COLA
NRC Director – Division of Construction Projects (Region II)
NRC Regional Administrator - Region IV
NRC Resident Inspectors' Office - GGNS

Ms. B. Abeywickrama
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Ms. A. Johnson
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Mr. P. D. Hinnenkamp (ECH)
Ms. D. Jacobs (ECH)
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Ms. D. Millar (ECH)
Ms. L. A. Patterson (ECH)
Mr. G. A. Rolfson (ECH)
Mr. J. Smith (ECH)
Mr. G. L. Sparks (ECH)
Ms. K. A. Washington (L-ENT)
Mr. T. L. Williamson (ECH)
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Mr. J. Hegner (Dominion)
Mr. B. R. Johnson (GE-Hitachi)
Mr. P. Smith (DTE)

ATTACHMENT 1

G3NO-2008-00025

RESPONSE TO NRC RAI LETTER NO. 21

RAI QUESTION NO. 09.05.01-1

RAI QUESTION NO. 09.05.01-1

NRC RAI 09.05.01-1

RG 1.206, C.III.1, Chapter 9, Section C.I.9.5.1.1 identifies that the COL applicant should provide site specific information on the fire water supply system. COLA Sections 9.5.1.4 and 9.2.10.2 identify the Station Water Service (SWS) as providing filtered clarified water for refilling the primary and secondary firewater storage tanks. RG 1.189 Position 3.2.1(i) states that fire water supplies should be filtered and treated as necessary to prevent or control biofouling or microbiologically induced corrosion of fire water systems. The Applicant needs to specifically include that the SWS filtering and clarification process, for water delivered to the firewater storage tanks, will "prevent or control biofouling or microbiologically induced corrosion (MIC)".

Entergy Response

As discussed in COLA FSAR Section 9.2.10.2, the Station Water System provides filtered clarified water to the Fire Protection System to fill the primary and yard fire water storage tanks.

The filtered water delivered to the firewater storage tanks will be treated as necessary to prevent or control biofouling or microbiologically induced corrosion (MIC), which meets RG 1.189 guidance.

Proposed COLA Revision

FSAR Section 9.5.1.4 will be revised as indicated in the attached draft markup.

Markup of Grand Gulf COLA

The following markup represents Entergy's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

9.5 OTHER AUXILIARY SYSTEMS

9.5.1 FIRE PROTECTION SYSTEM

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

9.5.1.1 DESIGN BASES

Codes, Standards, and Regulatory Guidance

Add the following sentence at the end of this section.

GGNS SUP 9.5.1-1

Table 9.5-201 supplements DCD Table 9.5-1 for those portions outside the DCD and operational aspects of the fire detection and suppression systems.

9.5.1.2 SYSTEM DESCRIPTION

Add the following after the first sentence in the first paragraph.

GGNS COL 9.5.1-4-A

Figure 9.5-201 provides a simplified diagram of the site-specific secondary firewater supply piping yard loop.

GGNS COL 9.5.1-1-A 9.5.1-2-A

Delete the "*" and "**" footnotes in DCD Table 9.5-2.

9.5.1.4 FIRE PROTECTION WATER SUPPLY SYSTEM

Add the following at the end of the first paragraph.

GGNS COL 9.5.1-4-A

Figure 9.5-201 provides a simplified diagram of the site-specific secondary firewater supply piping yard loop.

Water Sources

Delete the fourth and sixth sentences of the first paragraph and add the following after the first paragraph.

GGNS COL 9.5.1-1-A

The secondary firewater source is two non-seismic, firewater storage tanks. Each tank has a capacity of 1136 m^3 (300,000 gal), for a total capacity of 2271 m^3 (600,000 gallons), which provides a total secondary firewater source volume that meets NFPA 804 requirements and RG 1.189 guidance. The tanks are interconnected such that fire pumps can take suction from either or both of the storage tanks. The size of each tank is sufficient to supply the total water demand of the yard loop for a period of at least 120 minutes. The tanks are nonsafety-related, non-seismic, and are constructed in accordance with NFPA 22. Clarified makeup water to the tanks is supplied from the SWS with makeup capacity sufficient to refill the tank within an 8 hour period.

The filtered water delivered to the firewater storage tanks from the SWS is treated as necessary to prevent or control biofouling or microbiologically induced corrosion (MIC), which meets RG 1.189 guidance.

Fire Pumps

STD COL 9.5.1-2-A

Replace the sixth sentence in the first paragraph with the following.

Testing will be performed to demonstrate that the secondary fire protection pump circuit supplies a minimum of 484 m^3/hr (2130 gpm) with sufficient discharge pressure to develop a minimum of 107 psig line pressure at the Turbine Building/ yard interface boundary. This cannot be performed until the system is built. This activity will be completed prior to fuel receipt.

9.5.1.5 FIREWATER SUPPLY PIPING, YARD PIPING, AND YARD HYDRANTS

GGNS COL 9.5.1-4-A

Delete the last paragraph and add the following at the end of the first paragraph.

Figure 9.5-201 provides a simplified diagram of the site-specific secondary firewater supply piping yard loop.

ATTACHMENT 2

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RESPONSE TO NRC RAI LETTER NO. 21

RAI QUESTION NO. 09.05.01-2

RAI QUESTION NO. 09.05.01-2

NRC RAI 09.05.01-2

The Grand Gulf S-COLA has not presented the fire hazards analysis (e.g. tables) or the fire zone drawings for those areas outside the scope of the DCD (e.g. Yard Areas). Instead, the applicant has stated to defer these submittals until 6 months prior to fuel load. The applicant is asked to provide a bounding analysis depicting the current preliminary fire hazards analysis and fire zone drawings for the site specific areas in accordance with RG 1.206, RG 1.189 Position 1.2, and COL Information Items 9A.7-1-A and 9A.7-2-A.

Entergy Response

RG 1.206, Section C.III.1, 9.5.1.1 states, in part (emphasis added),

> *The referenced certified design typically includes a significant amount of information. With the exception of the items listed below, a COL applicant referencing a certified design does not need to provide additional information. Some of this information may not be available or possible to provide at the time the COL application is submitted. In such cases, for the items below, submit the information that is available, justify the inability to provide the information in the COL application, and provide details describing implementation plans, milestones, and sequences and/or ITAAC or commitments for developing, completing, and submitting this information during the construction period, prior to fuel load:*
>
> *(4) final fire hazards analysis based on purchased materials (type and quantity) and final plant equipment arrangements, including description of access for manual firefighting based on final layouts (typically not available until after COL submittal).*

Appendix 9A of the DCD provides a bounding fire hazards analysis of the yard areas. This appendix also includes a COL item to provide a more detailed analysis. DCD Section 9A.4.7 states:

> *This FHA includes an evaluation of the Pump House, Guard House, Hot Machine Shop, Service Water/Water Treatment Building (see Subsection 9A.4.9), Cold Machine Shop, Warehouse, Training Center, Service Building (see Subsection 9A.4.8), Fire Pump Enclosure (see Subsection 9A.4.11), Ancillary Diesel Building (see subsection 9A.4.10), Auxiliary Boiler Building, and Administration Building. A more detailed evaluation [emphasis added] of the Service Water/Water Treatment Building, Service Building, and Yard will be added during the Combined Construction and Operating License (COL) application for a specific site (COL 9A.7-2-A).*

As an example of the DCD bounding analysis, DCD Table 9A.5-7 provides a discussion of the fire hazards analysis for the service water building. This table provides the following conclusion:

Complete burnout of all equipment and cables within this Fire Area affects no safety-related or safe shutdown divisional equipment, but could affect redundant train A and B nonsafety-related equipment; all safety divisions and both on-site and off-site power supplies A and B are unaffected by fire and are operable.

Detailed design for Grand Gulf Unit 3 site-specific yard area structures has not been completed; therefore, fire zone drawings and detailed fire hazards analysis for the yard area outside the scope of the certified design cannot be included in the Grand Gulf Unit 3 COLA, as stated in FSAR Sections 9A.4.7, 9A.5.7, 9A.5.8 and 9A.5.9. Each of these FSAR sections has a commitment to complete the development of this information by six months prior to fuel load and to include this information in the FSAR, as appropriate, as part of a subsequent FSAR update. Providing commitments to develop the information prior to fuel load is consistent with the guidance provided in the RG 1.206, Section C.III.1, 9.5.1.1.

The site-specific fire zone drawings and detailed fire hazards analysis for each fire zone will contain a similar level of detail as the information contained in DCD Appendix 9A for the standard plant. The fire hazards analysis will be consistent with the guidance provided in DCD Appendix 9A and RG 1.189, Regulatory Position 1.2.

The detailed fire zone drawings will contain information such as:

- Fire area designations
- Fire area boundaries
- Fire suppression systems
- Fire barriers

The detailed fire hazards analysis will contain information such as:

- Identification and description of fire areas, including occupancy classification
- Applicable codes
- Potential combustibles
- Fire detection methods/equipment
- Fire suppression systems or equipment
- Anticipated combustible load, sprinkled and non-sprinkled
- Impacts of a fire assuming operation or non-operation of installed fire suppression systems

The yard areas will not contain safety-related components or systems and, except for the Hot-Machine Shop, will not contain radiological materials; site-specific structures will be located such that a fire or effects of a fire, including smoke, will not adversely affect any safety-related systems or equipment. As stated in DCD Section 9A.4.7, fire area separation is provided

between Yard Buildings and the Nuclear and Turbine Islands in accordance with NFPA 804, as expanded on in NFPA 80A.

Furthermore, in response to Grand Gulf RAI 19-2, dated October 1, 2008 (ADAMS Accession Number ML082770127), the COLA was revised to include a new section, FSAR Section 19AA.3.1, *Internal Fire Analysis*, which makes the following conclusions regarding the site-specific fire hazards analysis:

> *For the ESBWR probabilistic internal fire analysis, fire in a given area is assumed to cause failure of all fire-suppression components in that area. Site-specific results are further bounded by the fact that recovery of the failed system(s) after the postulated fire is not credited in the ESBWR PRA. Using these assumptions, the ESBWR probabilistic fire analysis shows that the risk from fires is still acceptability low. Therefore, the ESBWR probabilistic internal fire analysis is not impacted by Grand Gulf plant-specific fire analysis for the yard and service water areas.*

Proposed COLA Revision

None

ATTACHMENT 3

G3NO-2008-00025

REGULATORY COMMITMENTS

REGULATORY COMMITMENTS

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
FSAR Section 9.5.1.4 will be revised to reflect that the filtered water delivered to the firewater storage tanks from the SWS is treated as necessary to prevent or control biofouling or microbiologically induced corrosion (MIC).	✓		Future COLA submittal.