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G3NO-2008-00003

October 15, 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. 4 (GG3 COLA)

REFERENCE: NRC Letter to Entergy Nuclear, *Request for Additional Information Letter No. 4 Related to the SRP Section 13.01.02-13.01.03 for the Grand Gulf Combined License Application*, dated September 16, 2008 (ADAMS Accession No. ML082600204)

Dear Sir or Madam:

In the referenced letter, the NRC requested additional information on four items to support the review of certain portions of the Grand Gulf Unit 3 Combined License Application (COLA). The responses to the following Requests for Additional Information (RAIs) are provided as Attachments 1 through 4 to this letter:

- RAI Question 13.01.02-13.01.03-1 Fire Protection Organization
- RAI Question 13.01.02-13.01.03-2 Fire Protection Operational Program
- RAI Question 13.01.02-13.01.03-3 One Fire Brigade Shift
- RAI Question 13.01.02-13.01.03-4 Fire Protection Engineer

Should you have any questions, please contact Mr. Tom Williamson. Mr. Williamson may be reached as follows:

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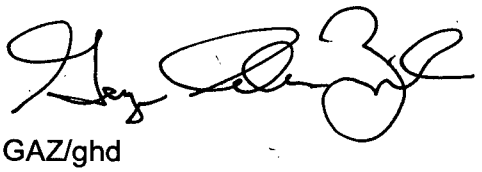
D088
NRO

This letter contains commitments as identified in Attachment 5.

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

Executed on October 15, 2008.

Sincerely,



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Attachments:
1. Response to RAI Question No. 13.01.02-13.01.03-1
2. Response to RAI Question No. 13.01.02-13.01.03-2
3. Response to RAI Question No. 13.01.02-13.01.03-3
4. Response to RAI Question No. 13.01.02-13.01.03-4
5. Regulatory Commitments

cc (email unless otherwise specified):
Mr. T. A. Burke (ECH)
Mr. S. P. Frantz (Morgan, Lewis & Bockius)
Mr. B. R. Johnson (GE-Hitachi)
Ms. M. Kray (NuStart)
Mr. P. D. Hinnenkamp (ECH)

NRC Project Manager – GGNS COLA
NRC Director – Division of Construction Projects (Region II)
NRC Regional Administrator - Region IV
NRC Resident Inspectors' Office: GGNS

ATTACHMENT 1

G3NO-2008-00003

RESPONSE TO NRC RAI LETTER NO. 4

RAI QUESTION NO. 13.01.02-13.01.03-1

RAI QUESTION NO. 13.01.02-13.01.03-1

NRC RAI 13.01.02-13.01.03-1

Relative to the criteria of RG 1.189, please clarify and describe the responsibilities of the fire protection organization as it pertains to the fire brigade, operations functional manager, quality assurance functional manager, security functional manager, fire protection site engineer (identified in DCD Rev 4), fire protection supervisor, and engineering manager, and site executive, or justify an alternative approach. Note that RG 1.189 does not require that the fire protection staff member who manages the fire brigade and the fire brigade member who fights the fire be part of the same organization, but they should meet the attributes of RG 1.189. In addition, the manager with direct fire protection program responsibilities should report to an upper level manager who has an oversight responsibility for the fire protection program. This upper level manager should report to a person who has management control over all organizations involved in fire protection activities. The applicant is also asked to ensure Figure 13.1-201, FSAR Sections 13.1.2.1.2.12, 13.1.2.1.2.3, and 13.1.2.1.2.2 are consistent with each other.

Entergy Response

The engineer in charge of fire protection reports to the functional manager in charge of engineering programs for direction in formulating, implementing, and assessing the effectiveness of the Fire Protection Program. The site executive in charge of plant management has ultimate responsibility for fire protection of the plant. Additionally, the engineer in charge of fire protection works with the manager in charge of operations through the assistant managers in charge of operations to coordinate activities and program requirements with the operations department. Relative to the criteria of RG 1.189, the fire protection organization responsibilities are further described and clarified below for the following positions:

- Fire brigade
- Manager in charge of operations
- Functional manager in charge of quality assurance
- Functional manager in charge of security
- Engineer in charge of fire protection
- Fire protection supervisor
- Manager in charge of engineering
- Site executive in charge of plant management

Fire Brigade

The fire brigade, described in part in FSAR Section 13.1.2.1.5, is responsible for fighting fires and responding to fire-related emergencies. The authority and responsibility of each fire brigade position is clearly defined in plant procedures. These responsibilities correspond to fire-fighting actions required by the fire-fighting procedures. The fire-fighting procedures address response to fires as the primary responsibility of fire brigade members and establish guidelines to prevent conflict with collateral responsibilities during fire emergencies.

Manager in Charge of Operations

The manager in charge of operations, addressed in FSAR Section 13.1.2.1.2.1, is responsible through the assistant managers in charge of operations and the managers in charge on shift for the overall safe operation of the plant during normal and emergency operations (including fires). Administrative procedures address the fire protection program responsibilities of the manager in charge of operations, which include ensuring that the fire protection program functions for which the operations department is responsible are carried out. These functions include:

- Communicating with the engineer in charge of fire protection in matters of fire brigade staffing, drills, training, and qualifications
- Performing surveillances and maintaining fire protection system equipment
- Maintaining the necessary administrative records, controls, and procedures associated with operations-related Fire Protection Program functions.

Manager in Charge of Quality Assurance

The functional manager in charge of quality assurance, addressed in FSAR Section 13.1.1.3.2.8, is responsible for ensuring compliance with the Fire Protection Program through Section 18 of the Quality Assurance Program Directive (QAPD).

Functional Manager in Charge of Security

The Fire Protection Program-related responsibilities of the functional manager in charge of security are established in administrative procedures and/or the physical security plan, addressed in DCD Section 9.5.1.15.5, and include providing access and escort for offsite fire fighters and implementation of contingency measures if necessary for fire brigade access to fires.

Engineer in Charge of Fire Protection

The responsibilities of the engineer in charge of fire protection are addressed in DCD Section 9.5.1.15.2 and FSAR Section 13.1.2.1.2.12. These responsibilities and authorities are further defined by plant procedures. The engineer in charge of fire protection works closely with and communicates with operations department personnel (shown in Figure 13.1-201 as the Manager Operations) to manage and conduct various Fire Protection Program functions including fire brigade staffing, drills, training, and qualification, equipment maintenance, and fire protection program records and procedures.

Table 1.9-201, "Conformance with Regulatory Guides," states one exception to RG 1.189 regarding organizational lines of authority and reporting for the engineer in charge of fire protection. The engineer in charge of fire protection reports through engineering programs to the manager in charge of engineering. The manager in charge of engineering reports through corporate engineering management to the chief nuclear officer. The manager in charge of engineering communicates closely with the site executive in charge of plant management for engineering related issues including fire protection program management.

Fire Protection Supervisor

This position is the engineer in charge of fire protection noted in the paragraph above.

Manager in Charge of Engineering

The responsibilities of the manager in charge of engineering are addressed in FSAR Section 13.1.1.3.2.1. The manager in charge of engineering, through the functional manager in charge of engineering programs, is responsible for ensuring the engineer in charge of fire protection performs his/her duties and providing support to accomplish those duties. As described in FSAR Section 13.1.1.2.1, the engineering organization receives direction from the site executive in charge of plant management in establishing priorities based on issues affecting safe operation of the plant which includes fire protection. This line of communication is indicated on Figure 13.1-201 by the dotted line from the site executive in charge of plant management to the manager in charge of engineering.

Site Executive in Charge of Plant Management

The responsibilities of the site executive in charge of plant management are addressed in FSAR Section 13.1.1.3.1.5. Although the engineer in charge of fire protection is part of the engineering department, which reports, as noted in the exception described above, to corporate engineering, the site executive in charge of plant management has ultimate responsibility for the site Fire Protection Program as indicated by the dotted line shown on Figure 13.1-201 from the manager in charge of engineering to the site executive in charge of plant management.

Consistency between Figure 13.1-201 and FSAR Sections 13.1.2.1.2.12, 13.1.2.1.2.3, and 13.1.2.1.2.2, which show and/or discuss communication between operations personnel and the engineer in charge of fire protection, is addressed by changes to FSAR Sections 13.1.2.1.2.1 and 13.1.2.1.12.

Proposed COLA Revision:

The COLA will be revised as indicated in attached draft markup to reflect the following changes:

- FSAR Section 13.1.2.1.5, "Fire Brigade," will be revised to clarify that station procedures address fire brigade member responsibilities.

- FSAR Section 13.1.2.1.2.1, "Manager in Charge of Operations," will be revised to clarify text describing communication between operations and personnel of the fire protection program and make the text consistent with Figure 13.1-201.

- FSAR Section 13.1.2.1.2.12, "Engineer in Charge of Fire Protection," will be revised to clarify text describing communication between the engineer in charge of fire protection and operations personnel and make the text consistent with Figure 13.1-201.

- FSAR 13.1.1.2.1, "Engineering," will be revised to make the text which describes communication between engineering and the site executive in charge of plant management consistent with Figure 13.1-201.

- FSAR 13.1.1.3.1.5, "Site Executive in Charge of Plant Management," will be revised to clarify the reporting/communication responsibilities between engineering and the site executive in charge of plant management for matters involving fire protection.

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.

- Quality Assurance
- Training
- Safety review
- Fire protection
- Emergency organization
- Outside contractual assistance

In the event that station personnel are not qualified to deal with a specific problem, the services of qualified individuals within the company or an outside consultant are engaged. Figure 13.1-201 illustrates the management and technical support organizations supporting operation of the plant. Section 13.1.1.3.2 provides descriptions of responsibilities and authorities of management positions for organizations providing technical support. Table 13.1-201 shows the estimated number of positions required for each function.

Unit 3 shares its site with Unit 1. Multiple layers of protection are provided to preserve unit integrity including organization. Organizationally, operators and other shift members are assigned to a specific unit. Physical separation of units helps to minimize wrong-unit activities. In addition, station procedures and programs provide operating staff with methods to minimize human error including tagging programs, procedure adherence requirements, and training.

13.1.1.2.1 Engineering

The site engineering department consists of system engineering, design engineering, and engineering programs. These groups are responsible for performing the classical design activities as well as providing engineering expertise for programs, such as inservice inspection/inservice testing (ISI/IST), fire protection, snubbers, and valves. Corporate engineering provides support for engineering projects, safety and engineering analysis, and nuclear fuels engineering. They are responsible for probabilistic safety assessment and other safety issues, plant system reliability analysis, performance and technical support, core management, and periodic reactor testing.

Each of the site engineering groups has a functional manager who reports to the manager in charge of engineering on site or to managers and executives in corporate engineering and technical services.

The engineering organization is responsible for:

- Support of plant operations in the engineering areas of mechanical, structural, electrical, thermal-hydraulic, metallurgy and materials, electronic, instrument and control, and fire protection. Priorities for support

activities are established based on input from the ~~plant manager~~site executive in charge of plant management with emphasis on issues affecting safe operation of the plant and fire protection.

- Support of procurement, chemical and environmental analysis and maintenance activities in the plant as requested by the plant manager.
- Performance of design engineering of plant modifications.
- Maintaining the design basis by updating the record copy of design documents as necessary to reflect the actual as-built configuration of the plant.
- Accident and transient analyses.
- Human Factors Engineering design process.

Reactor engineering, part of system engineering, provides technical assistance in the areas of core operations, core thermal limits, and core thermal hydraulics.

Engineering work may be contracted to and performed by outside companies in accordance with the quality assurance program.

Engineering resources are shared between units. A single management organization oversees the engineering work associated with the station units.

13.1.1.2.2 Safety Review

Review and audit activities are addressed in the Quality Assurance Program Description (QAPD).

Oversight of safety review of station programs, procedures, and activities is performed by a plant safety review committee, a corporate safety review committee, and the Nuclear Safety Assurance (NSA) organization. NSA is responsible for corrective actions and assessments. The manager in charge of NSA reports to the site executive in charge of plant management.

Personnel resources of the NSA organization are shared between units. A single management organization oversees the NSA organization for the station units.

13.1.1.2.3 Quality Assurance

Safety-related activities associated with the operation of the plant are governed by quality assurance (QA) direction established in Chapter 17 and the QAPD. QA is a function of the QA Department and includes:

- General quality assurance indoctrination and training for the nuclear station personnel.

nuclear operations maintains direct control of nuclear plant operations through a regional senior executive and the site executive in charge of plant management. The executive in charge of nuclear operations is also responsible for the support functions of emergency planning, training and development, and security. The executive in charge of nuclear operations reports to the CEO, nuclear.

13.1.1.3.1.3 Executive in Charge of Engineering and Technical Services

The executive in charge of engineering and technical services is responsible for the engineering activities associated with the nuclear plants in the system and for technical services such as licensing, information technology, and materials, procurement, and contracts. He performs this function through executives and managers who are responsible for the functions and programs discussed in Section 13.1.1.2.1. The executive in charge of engineering and technical services reports to the CEO, nuclear.

13.1.1.3.1.4 Executive in Charge of Planning, Development, and Oversight

The executive in charge of planning, development, and oversight is responsible for ensuring that regulatory requirements associated with the combined operating license are implemented, establishing the necessary licensing framework for the site, and maintaining lines of communication with the regulatory commission during pre- and post-combined operating license application phase and up through the construction phase of the plant, and for oversight and quality assurance throughout the life of the plant. The direct reports of the executive in charge of planning, development, and oversight include executives and managers responsible for construction, new plant licensing, and quality assurance. The executive in charge of planning, development, and oversight reports to the CEO, nuclear.

13.1.1.3.1.5 Site Executive in Charge of Plant Management

The site executive in charge of plant management reports to the executive in charge of nuclear operations through a regional senior executive. The site executive in charge of plant management is directly responsible for management and direction of activities associated with the efficient, safe, and reliable operation of the nuclear station, except for those functions delegated to the executive in charge of engineering and technical services and the executive in charge of planning, development, and oversight. The site executive in charge of plant management ~~is assisted in management and technical support activities by the plant manager and manager in charge of nuclear safety assurance~~communicates with the manager in charge of engineering to establish plant safety-related and fire protection priorities for engineering. The site executive in charge of plant management is responsible for the site fire protection program through the engineer in charge of fire protection. See Section 13.1.1.2.10. The site executive in charge of plant management is assisted in management and technical support activities by the plant manager and the manager in charge of nuclear safety assurance.

supervisor of radwaste/rad material control reports to the manager in charge of radiation protection.

13.1.2.1.2 Operations Department

All operations activities are conducted with safety of personnel, the public, and equipment as the overriding priority. The operations department is responsible for:

- Operation of station equipment.
- Monitoring and surveillance of safety- and nonsafety-related equipment.
- Fuel loading.
- Providing the nucleus of emergency and fire-fighting teams.

The operations department maintains sufficient licensed and senior licensed operators to staff the control room continuously using a crew rotation system. The operations department is under the authority of the manager in charge of operations, who through the assistant manager in charge of shift operations directs the day-to-day operation of the plant.

Specific duties, functions, and responsibilities of key shift members are discussed in Sections 13.1.2.1.2.4 through 13.1.2.1.2.8 and in plant administrative procedures and the technical specifications. The minimum shift staffing requirements are shown in Table 13.1-202. This table reflects the staffing and qualifications assumed in Topical Report ESBWR HFE Staffing and Qualifications, NEDO-33266 (Reference 13.1-204). This table is updated to reflect changes required upon issuance of the Result Summary Report of NEDO-33266. This table complies with the requirements of 10 CFR 50.54 (i) through (m).

Some resources of the operations organization are shared between units. Administrative and support personnel perform their duties on either unit. Additional operations staff is required to fill the on-shift staffing requirements of the additional units. To operate or supervise the operation of more than one unit, an operator (SRO or RO) must hold an appropriate, current license for each unit. A single management organization oversees the operations group for the station units. See Table 13.1-201 for the estimated number of staff in the operations department.

The operations support section is staffed with sufficient personnel to provide support activities for the operating shifts and overall operations department. The following is an overview of the operations organization.

13.1.2.1.2.1 Manager in Charge of Operations

The manager in charge of operations has overall responsibility for the day-to-day operation of the plant. The manager in charge of operations reports to the plant

manager and is assisted by the assistant managers in charge of shift operations, operations support, and operations training. The manager in charge of operations, through the assistant managers of operations, communicates with fire protection program personnel to address performance of fire protection program functions for which the operations department has responsibility. The manager in charge of operations or the assistant manager of shift operations is SRO licensed.

13.1.2.1.2.2 Assistant Manager in Charge of Operations-Shift

The assistant manager in charge of operations-shift, under the direction of the manager in charge of operations, is responsible for:

- Shift plant operations in accordance with the operating license, technical specifications, and written procedures.
- Providing supervision of operating shift personnel for operational shift activities including those of emergency and fire-fighting teams.
- Coordinating with the assistant manager in charge of operations support and other plant staff sections.
- Verifying that nuclear plant operating records and logs are properly prepared, reviewed, evaluated, and turned over to the assistant manager in charge of operations support.

The assistant manager in charge of operations-shift is assisted in these areas by the managers in charge on-shift who direct the operating shift personnel. The assistant manager in charge of operations-shift reports to the manager in charge of operations and in the absence of the manager in charge of operations or assistant manager in charge of operations-support may assume the duties and responsibilities of either of these positions.

13.1.2.1.2.3 Assistant Manager in Charge of Operations-Support

The assistant manager in charge of operations-support, under the direction of the manager in charge of operations, is responsible for:

- Directing and guiding plant operations support activities in accordance with the operating license, technical specifications, and written procedures.
- Providing supervision of operating support personnel, for operations support activities, and coordination of support activities.
- Providing for nuclear plant operating records and logs to be turned over to the nuclear records group for maintenance as quality assurance records.

and advice to mitigate the incident and minimize the effect on personnel, the environment, and plant equipment.

A senior reactor operator on shift who meets the qualifications for the combined SRO/STA position specified by Option 1 of Generic Letter 86-04 (Reference 13.1-202) may also serve as the STA. If this option is used for a shift, then the separate STA position may be eliminated for that shift.

13.1.2.1.2.12 Engineer in Charge of Fire Protection

The engineer in charge of fire protection and his staff are responsible for the following:

- Fire protection program requirements, including consideration of potential hazards associated with postulated fires, knowledge of building layout, and system design.
- Post-fire shutdown capability.
- Design, maintenance, surveillance, and quality assurance of fire protection features (e.g., detection systems, suppression systems, barriers, dampers, doors, penetration seals and fire brigade equipment).
- Fire prevention activities (administrative controls and training).
- Fire brigade organization and training.
- Pre-fire planning including review and updating of pre-fire plans at least every two years.

The engineer in charge of fire protection reports to the functional manager in charge of engineering programs for direction in formulating, implementing, and assessing the effectiveness of the fire protection program. The site executive in charge of plant management has ultimate responsibility for fire protection of the plant. Additionally, the engineer in charge of fire protection works with the ~~assistant manager~~manager in charge of operations through the assistant managers in charge of operations ~~support~~ to coordinate activities and program requirements with the operations department. In accordance with RG 1.189, the engineer in charge of fire protection is a graduate of an engineering curriculum of accepted standing and has completed not less than six years of engineering experience, three of which were in a responsible position in charge of fire protection engineering work. The engineer in charge of fire protection has training and experience in nuclear plant safety or has someone available to him who has training and experience in nuclear plant safety.

The minimum composition of the operating shift crew is contingent upon the unit operating status. Position titles, license requirements and minimum shift manning for various modes of operation are contained in Technical Specifications, administrative procedures, and Table 13.1-202. Figure 13.1-202 illustrates a typical operating organization based on operating experience and exceeds minimum shift requirements in some cases.

13.1.2.1.5 Fire Brigade

GGNS COL 9.5.1-10-H

The station is designed and the fire brigade organized to be self sufficient with respect to fire-fighting activities. The fire brigade is organized to deal with fires and related emergencies that could occur. It consists of a fire brigade leader and a sufficient number of team members to be consistent with the equipment that must be put in service during a fire emergency. Procedures define fire brigade member primary responsibilities corresponding to fire-fighting actions and establish guidelines to prevent conflict with collateral responsibilities during fire emergencies. A sufficient number of trained and physically qualified fire brigade members are available on site during each shift. The fire brigade consists of at least five members on each shift. Members of the fire brigade are knowledgeable of building layout, and system design. The assigned fire brigade members for any shift do not include the manager in charge on shift nor any other members of the minimum shift operating crew necessary for safe shutdown of the unit, nor does it include any other personnel required for other essential functions during a fire emergency. Fire brigade members for a shift are designated in accordance with established procedures at the beginning of the shift. The fire brigade responds to fire emergencies in both Unit 1 and Unit 3.

The brigade leader and at least two brigade members have sufficient training in or knowledge of plant systems to understand the effects of fire and fire suppressants on safe-shutdown capability. The brigade leader is competent to assess the potential safety consequences of a fire and advise control room personnel. Such competence by the brigade leader is evidenced by possession of an operator's license or equivalent knowledge of plant systems gained through successful completion of training programs for the fire brigade leader or fire brigade member positions. These training programs are developed using a systematic approach to training. The qualification of fire brigade members includes an annual physical examination to determine their ability to perform strenuous fire-fighting activities.

13.1.3 QUALIFICATIONS OF NUCLEAR PLANT PERSONNEL

13.1.3.1 QUALIFICATION REQUIREMENTS

GGNS COL 13.1-1-A

Qualifications of managers, supervisors, operators, and technicians of the operating organization meet the qualification requirements in education and

ATTACHMENT 2

G3NO-2008-00003

RESPONSE TO NRC RAI LETTER NO. 4

RAI QUESTION NO. 13.01.02-13.01.03-2

RAI QUESTION NO. 13.01.02-13.01.03-002

NRC RAI 13.01.02-13.01.03-2

RG 1.206, C.III.1, Chapter 9, Section C.I.9.5.1.1 identifies that the applicant should provide information on the fire protection operational program. RG 1.189, Section 1.6.4.1 states that the brigade leader should be competent to assess the potential safety consequences of a fire and advise control room personnel and such competence by the brigade leader may be evidenced by possession of an operator's license or equivalent knowledge of plant systems. The staff requests that the applicant provide clarification of the specific training, knowledge and competence of the fire brigade leader, as discussed in Section 13.1.2.1.5, to ensure that the fire brigade leader's qualifications are in conformance with RG 1.189, Section 1.6.4.1, or justify an alternative approach.

Entergy Response

Clarification is being provided on the specific training, knowledge, and competence of the fire brigade leader, as discussed in FSAR Section 13.1.2.1.5, to ensure that this individual's qualifications are in conformance with RG 1.189, Section 1.6.4.1.

RG 1.189, Section 1.6.4.1 states the following:

> *"The brigade leader and at least two brigade members should have sufficient training in or knowledge of plant systems to understand the effects of fire and fire suppressants on safe-shutdown capability. The brigade leader should be competent to assess the potential safety consequences of a fire and advise control room personnel. Such competence by the brigade leader may be evidenced by possession of an operator's license or equivalent knowledge of plant systems."*

Each fire brigade leader and at least two brigade members are trained and qualified to at least the non-licensed operator level for their unit in a training program accredited by the National Academy for Nuclear Training. The training program includes but is not limited to classroom and on-the-job training covering safety and non-safety system functions and operations. The training includes examinations to ensure the individuals are familiar with plant equipment locations and functions. Specific initial and continuing training is provided for fire brigade leaders and members on fire-fighting. This includes the effects of fire and fire suppressants on equipment. This combination of training ensures that a fire brigade leader and at least two members of the fire brigade have the required knowledge and training of plant systems and are knowledgeable of the effects of fire and fire suppressants on plant safe shutdown capability.

DCD Section 9.5.1.15.4.2 provides additional discussion regarding the training for fire brigade members.

Proposed COLA Revision:

FSAR Section 13.1.2.1.5 will be revised to reflect conformance to the above RG 1.189 requirement as indicated in attached draft markup.

Markup of Grand Gulf Unit 3 COLA

The following markup represents Entergy's good faith effort to show how the COLA will be revised in response to the subject RAI in a future COLA revision. 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 revision may be somewhat different than as presented herein.

The minimum composition of the operating shift crew is contingent upon the unit operating status. Position titles, license requirements and minimum shift manning for various modes of operation are contained in Technical Specifications, administrative procedures, and Table 13.1-202. Figure 13.1-202 illustrates a typical operating organization based on operating experience and exceeds minimum shift requirements in some cases.

13.1.2.1.5 Fire Brigade

GGNS COL 9.5.1-10-H

The station is designed and the fire brigade organized to be self sufficient with respect to fire-fighting activities. The fire brigade is organized to deal with fires and related emergencies that could occur. It consists of a fire brigade leader and a sufficient number of team members to be consistent with the equipment that must be put in service during a fire emergency. Procedures define fire brigade member primary responsibilities corresponding to fire fighting actions and establish guidelines to prevent conflict with collateral responsibilities during fire emergencies. A sufficient number of trained and physically qualified fire brigade members are available on site during each shift. The fire brigade consists of at least five members on each shift. Members of the fire brigade are knowledgeable of building layout, and system design. The assigned fire brigade members for any shift do not include the manager in charge on shift nor any other members of the minimum shift operating crew necessary for safe shutdown of the unit, nor does it include any other personnel required for other essential functions during a fire emergency. Fire brigade members for a shift are designated in accordance with established procedures at the beginning of the shift. The fire brigade responds to fire emergencies in both Unit 1 and Unit 3.

The brigade leader and at least two brigade members have sufficient training in or knowledge of plant systems to understand the effects of fire and fire suppressants on safe-shutdown capability. The brigade leader is competent to assess the potential safety consequences of a fire and advise control room personnel. Such competence by the brigade leader is evidenced by possession of an operator's license or equivalent knowledge of plant systems gained through successful completion of training programs for the fire brigade leader or fire brigade member positions. These training programs are developed using a systematic approach to training. The qualification of fire brigade members includes an annual physical examination to determine their ability to perform strenuous firefighting activities.

13.1.3 QUALIFICATIONS OF NUCLEAR PLANT PERSONNEL

13.1.3.1 QUALIFICATION REQUIREMENTS

GGNS COL 13.1-1-A

Qualifications of managers, supervisors, operators, and technicians of the operating organization meet the qualification requirements in education and

ATTACHMENT 3

G3NO-2008-00003

RESPONSE TO NRC RAI LETTER NO. 4

RAI QUESTION NO. 13.01.02-13.01.03-3

RAI QUESTION NO. 13.01.02-13.01.03-3

NRC RAI 13.01.02-13.01.03-3

Acceptance Criteria: RG 1.189 Position 1.1, 1.6, and 3.5.1. NFPA 600. Grand Gulf's FSAR Section 13.1.2.1.5 states that "the fire brigade responds to fire emergencies in both Unit 1 [existing unit] and Unit 3 [new unit]". Units 1 and 3 are meant to be separate units with no sharing of buildings or systems. The applicant is asked to provide further information justifying the appropriateness of using one fire brigade shift to cover both units. Include justification on staff manning, organization, training on diverse units, which equipment will be shared and which will be co-located, performance-criteria for responding to fires in each unit, and what happens if there is a fire in both units at the same time. NFPA 600 should be added to the FSAR Table 1.9-204.

Entergy Response

Further information is being provided below which justifies the appropriateness of using one fire brigade shift to cover both units. Justification is included on the following:

- Staff manning
- Organization
- Training on diverse units
- Equipment to be shared and/or co-located
- Performance criteria for responding to fires in each unit
- Required actions for addressing fires in both units concurrently

The use of one fire brigade shift to cover both units will be addressed by site procedures, training, drills, and practices. The GGNS site has a single Protected Area and a single security force. Entergy plans to enlarge the Protected Area of the existing Unit 1 in order to also contain the new Unit 3.

The fire protection systems and equipment will be separate between units except for the fire truck. The fire truck is located within the protected area and can be used to respond to fires both inside and outside the Protected Area.

Each unit has an operational shift staff consisting of licensed and non-licensed operators. On each unit, each shift will have one non-licensed operator appointed as Fire Brigade Leader and two other non-licensed operators who serve as fire brigade members.

In response to a fire, all six persons respond to the fire. The two fire brigade leaders determine who will lead the fire-fighting efforts for the specific fire based on the fire's location. Each site area and facility has a pre-designated lead fire brigade leader, Unit 1 or Unit 3. This designation will be based primarily on whether the fire protection equipment for the area is Unit 1 or Unit 3 equipment.

Unit 1 and Unit 3 fire brigade leaders are trained on the designation of lead unit. Cross training is conducted for each Unit 1 and Unit 3 fire brigade member on the opposite unit to enable them to have the knowledge, skills, and abilities to respond to fires on the opposite unit, including operation of fire suppression equipment. This cross training will be developed using the systematic approach to training to ensure that individuals are capable of responding to any specific fire location and able to operate the fire suppression equipment under the direction of the Unit Fire Brigade Lead.

The training and qualification process for non-licensed operators includes training on safety system functions, location and importance. This training includes the ability to recognize safety equipment in a fire location. Qualification includes knowledge testing and plant walkthroughs to confirm the ability to recognize safety equipment and fire-fighting equipment. Periodic drills and continuing training reinforce and confirm these knowledge, skills and abilities. Utilization of non-licensed operators as the fire brigade leader and the two fire brigade members for a unit meets the RG 1.189 guidance. The two non-licensed operators from the opposite unit can function as fire brigade members due to the cross training discussed above. This plan fully meets regulatory requirements and the guidance in RG 1.189.

Administrative procedures implementing the Fire Protection Plan will include protocols for communications between the Fire Brigade and the Unit 1 and Unit 3 control rooms.

RG 1.189 Rev. 1 page 17 under the heading of "Conditions of Fire Occurrence," specifically states that the analysis for developing the Fire Protection Program need not postulate the occurrence of simultaneous unrelated fires in two or more units. Therefore, the fire brigade staffing does not include provision for fighting fires in both units simultaneously. In the event of two fires occurring simultaneously, one in each unit, the on-site fire brigade would be able to respond to both upon arrival on-site of off-site fire fighters or staff augmentation by off-shift staff should they be available.

The current/newest edition of NFPA 600 is the 2005 version which is listed in DCD Table 1.9-22. DCD Table 1.9-22 is incorporated by reference and standards listed there are not required to be relisted in FSAR Table 1.9-204 unless a later edition is referenced in the COLA.

Proposed COLA Revision:

None.

ATTACHMENT 4

G3NO-2008-00003

RESPONSE TO NRC RAI LETTER NO. 4

RAI QUESTION NO. 13.01.02-13.01.03-4

RAI QUESTION NO. 13.01.02-13.01.03-4

NRC RAI 13.01.02-13.01.03-4

RG 1.189, Regulatory Position 1.6.1 states that the engineer in charge of the fire protection program (FPP) should have training and experience in fire protection and in nuclear plant safety to provide a comprehensive approach in directing the FPP for the nuclear plant. The applicant is asked to include this requirement in FSAR Section 13.1.2.1.2.12 or justify why the fire protection engineer is not required to have nuclear safety knowledge, training, and/or experience.

Entergy Response

As noted in RG 1.189, Regulatory Position 1.6, the Fire Protection Program should be under the direction of an individual who has available staff personnel knowledgeable in both fire protection and nuclear safety. In addition, Regulatory Position 1.6.1 states the formulation and assurance of the Fire Protection Program and its implementation should be the responsibility of personnel prepared by training and experience in fire protection and in nuclear plant safety to provide a comprehensive approach in directing the Fire Protection Program for the nuclear power plant. As such, the responsible individual should either be knowledgeable in nuclear safety or have available staff personnel knowledgeable in nuclear safety. A change to FSAR Subsection 13.1.2.1.2.12 will be made to include a requirement for either the engineer in charge of fire protection and/or someone available to the fire protection engineer to have training and experience in nuclear plant safety.

Proposed COLA Revision:

FSAR Subsection 13.1.2.1.2.12 will be revised to address the above RG 1.189 requirement as indicated in attached draft markup.

Markup of Grand Gulf Unit 3 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.

and advice to mitigate the incident and minimize the effect on personnel, the environment, and plant equipment.

A senior reactor operator on shift who meets the qualifications for the combined SRO/STA position specified by Option 1 of Generic Letter 86-04 (Reference 13.1-202) may also serve as the STA. If this option is used for a shift, then the separate STA position may be eliminated for that shift.

13.1.2.1.2.12 Engineer in Charge of Fire Protection

The engineer in charge of fire protection and his staff are responsible for the following:

- Fire protection program requirements, including consideration of potential hazards associated with postulated fires, knowledge of building layout, and system design.
- Post-fire shutdown capability.
- Design, maintenance, surveillance, and quality assurance of fire protection features (e.g., detection systems, suppression systems, barriers, dampers, doors, penetration seals and fire brigade equipment).
- Fire prevention activities (administrative controls and training).
- Fire brigade organization and training.
- Pre-fire planning including review and updating of pre-fire plans at least every two years.

The engineer in charge of fire protection reports to the functional manager in charge of engineering programs for direction in formulating, implementing, and assessing the effectiveness of the fire protection program. The site executive in charge of plant management has ultimate responsibility for fire protection of the plant. Additionally, the engineer in charge of fire protection works with the ~~assistant manager~~manager in charge of operations through the assistant managers in charge of operations ~~support~~ to coordinate activities and program requirements with the operations department. In accordance with RG 1.189, the engineer in charge of fire protection is a graduate of an engineering curriculum of accepted standing and has completed not less than six years of engineering experience, three of which were in a responsible position in charge of fire protection engineering work. The engineer in charge of fire protection has training and experience in nuclear plant safety or has someone available to him who has training and experience in nuclear plant safety.

ATTACHMENT 5

G3NO-2008-00003

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	
Entergy will revise FSAR Sections 13.1.1.2.1, 13.1.1.3.1.5, 13.1.2.1.2.1, 13.1.2.1.2.12, and 13.1.2.1.5, as indicated in the draft revisions included in Attachments 1, 2 and 4 of this letter, in Revision 1 of Part 2 of the COL application.	✓		Future COLA Submittal