PMSTPCOL PEmails

From: Muniz, Adrian
Sent: Thursday, September 24, 2009 1:30 PM
To: rhbense@stpegs.com
Subject: Chapter 8 Draft Supplemental RAIs
Attachments: RAI 3603.doc; RAI 3619.doc; RAI 3632.doc; RAI 3731.doc

Richard:

I have attached to this electronic communication draft requests for additional information (RAIs) for Chapter 8 of the STP COLA. If you need a conference call to clarify the requested information, please contact me. If a conference call is not needed, please send me an email and I will continue the formal process of issuing the RAIs to STPNOC.

Thanks,

Adrian Muñiz, USNRC
Chapter 8 PM

Hearing Identifier: SouthTexas34Public_EX
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Mail Envelope Properties (Adrian.Muniz@nrc.gov20090924132900)

Subject: Chapter 8 Draft Supplemental RAIs
Sent Date: 9/24/2009 1:29:54 PM
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"rhbense@stpegs.com" <rhbense@stpegs.com>
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Files	**Size**	**Date & Time**
MESSAGE	436	9/24/2009 1:29:00 PM
RAI 3603.doc	30714	
RAI 3619.doc	35322	
RAI 3632.doc	32762	
RAI 3731.doc	31738	

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Request for Additional Information No. 3603 Revision 0

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 08.02 - Offsite Power System
Application Section: 08.02

QUESTIONS for Electrical Engineering Branch (EEB)

08.02-***

RAI 08.02-9 S1:

In response to RAI-08.02-9 pertaining to the relay protection scheme provided for the switchyard and its components, the applicant provided additional clarifications andstated that specific details regarding protective devices were not available because the detailed design for switchyard protective relaying had not been completed.

The staff, however, requests that the applicant address the use of solid state and digital protective devices. Such devices are susceptible to electromagnetic and radio-frequency interference due to lightning strikes, for instance. If such devices are used, the staff requests that the applicant also discuss whether they intend to use the guidance of RG 1.180, “Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Circuits.” If the guidance of RG 1.180 is not used, the applicant is requested to provide appropriate justification. If the guidance of RG 1.180 is used, the applicant is requested to add the RG to FSAR Section 8.1, Table 8.1-1.

Request for Additional Information No. 3619 Revision 0

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 08.03.01 - AC Power Systems (Onsite)
Application Section: 08.03

QUESTIONS for Electrical Engineering Branch (EEB)

08.03.01-***

RAI 08.03.01-4 S1:

In response to RAI 08.03.01-4 pertaining to the applicant's conformance to the guidance of SECY-91-078, the applicant proposed to delete the intermediate stub buses between reserve auxiliary transformer (RAT) A and the safety-related buses. It is not clear, however, whether the applicant intents to use RAT A or RAT B as the source of offsite power with the attributes described by the SECY paper.

As indicated by the applicant, SECY-91-078 includes the following statement: "Such an arrangement increases the difficulty in properly regulating voltage at the safety buses, subjects the safety loads to transients caused by the non-safety loads, and adds additional failure points between the offsite power sources and safety loads." Since RAT A is also used to supply the PIP buses, RAT A, with or without the intermediate stub buses, does not meet the criteria of the SECY guidance in that a fault or a transient on the non-safety PIP buses would be reflected on the safety buses. If, on the other hand, the applicant proposes to use RAT B, the staff requests that the applicant confirm that the breakers which supply the PIP buses from Bus CTG 3 as well as the supply breaker from the CTG are maintained open, except during a station blackout. The staff also requests that the applicant revise the appropriate figures and make them available for review.

08.03.01-***

RAI 08.03.01-10 S1:

In response to RAI 08.03.01-10 pertaining to periodic testing of isolation devices, the applicant stated that Class 1E to non-Class 1E isolation devices are safety related and, as such, they would be covered by FSAR subsection 8.3.4.30. This subsection indicates that the applicant would develop procedure(s) for the periodic testing of all Class 1E electrical systems and equipment in accordance with surveillance and test requirements of Section 7 of IEEE 308. The applicant, however, appeared to imply that they would not perform periodic testing of isolation devices in Instrumentation and Control Circuits. STP reached this conclusion on the basis that IEEE Standard 384, Section 7.2.1, does not specifically include a requirement for periodic testing of isolation devices in instrumentation and control (I&C) circuits and that the Standard only requires that "the capability of a device to perform its isolation function shall be demonstrated by qualification tests."

However, the test requirement in Section 7.2.2.1 (not 7.2.1) of IEEE 384-1992 is only intended to confirm the isolation capability of the isolation device. Appendix B, Criterion XI, Test Control, states, in part: “A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. The test program shall include, as appropriate, proof tests prior to installation, preoperational tests, and operational tests during nuclear power plant or fuel reprocessing plant operation, of structures, systems, and components.” This requirement makes no distinction between electrical and I&C components. The continuous capability of electrical devices to perform their safety function is also discussed in IEEE 308, Section 6.4, which does not exclude isolation devices in the statement that, “Tests shall be performed at scheduled intervals to detect within practical limits the deterioration of the equipment toward an unacceptable condition.” Test intervals should be developed based on the guidance of IEEE 338, Section 6.5.

Based on the above, confirm that isolation devices in I&C circuits will be included in the STP periodic test program. Isolation devices include those components used to isolate redundant Class 1E circuit as well as safety-related circuits from non-safety related ones. If the isolation devices in I&C circuits are not included in the STP periodic test program, discuss how it can be assured that these devices will continue to perform their isolation function throughout the life of the plant.

08.03.01-***

RAI 08.03.01-12 S1

In RAI 08.03.01-12, the staff requested that the applicant discuss the effect of the temperature increase from 50°C to 60°C on (1) DG performance (DG rating, effects on electronic components associated DG control system, etc.), (2) Cable ampacity, (3) mild environment equipment qualification, and (4) operation of other equipment in the room if any. In their response to the staff questions, the applicant failed to address DG performance in the proposed ambient temperature.

The applicant is requested to discuss any derating that will be required if the temperature of the inlet air to the diesel is increased from 50°C to 60°C and if the generator is required to operate in an ambient temperature of 60°C. Also if a derating of the diesel and generator is required, discuss the impact of such derating on the diesel generator loading, both transient and steady-state.

Request for Additional Information No. 3632 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 08.04 - Station Blackout
Application Section: 08.04

QUESTIONS for Electrical Engineering Branch (EEB)

08.04-***

RAI 08.04-2 S1:

In RAI 08.04-2, the staff requested that the applicant address station blackout-related procedures. The applicant provided adequate response pertaining to Station Blackout (SBO) Response Guidelines and AC Power Restoration. Regarding Severe Weather Guidelines the applicant stated that, "in the June 16, 1989 letter from T.E. Murley, USNRC to W. H. Rasin, Nuclear Management and Resources Council (Included in Appendix K to NUMARC 87-00), it is stated that not all plants are required to have procedures which require shutdown two hours prior to hurricane (i.e., Severe Weather Guidelines) to address Station Blackout. Since the ABWR has an Alternate AC supply available within 10 minutes of the Station Blackout, there is no specific requirement for Severe Weather Guidelines to be included as a Station Blackout response procedure."

As indicated in the original request for additional information, NUMARC 87-00, endorsed by Regulatory Guide 1.155 and referenced by SRP 8.4, states that the SBO response procedures include (1) Station Blackout Response Guidelines, (2) AC Power Restoration, and (3) Severe Weather Guidelines. These Guidelines are discussed in section 4.2 of the NUMARC document. NUMARC also states that the actions contained within these guidelines "are important considerations during a station blackout" and that "Utilities should assure [that] these considerations are addressed." Therefore, the staff does not agree with the applicant position that, because the ABWR has an alternate AC supply available within 10 minutes, there is no specific requirement for Severe Weather Guidelines to be included as a Station Blackout response procedure.

Regarding the T. E. Murley's statement pertaining to plant shutdown in anticipation of a hurricane, applicants are required to evaluate specific plant conditions as provided for in NUMARC 87-00, not on the basis of whether or not an AAC source is available. The staff agrees that not all plants are required to have procedures to shutdown the plant two hours before a hurricane. However those plants are required to have a severe weather procedure per NUMARC 87-00, Section 4.2.3. The shutdown requirement constitutes only one action (action (4) (a)) of the severe weather guidelines (Section 4.2.3). Regarding this issue, the staff reviewed the STP, Units 1 and 2, FSAR and observed that the design of Units 1 and 2, like the proposed design of Units 3 and 4, includes an AAC source that can be made available in 10 minutes. The staff also observed that, for Units 1 and 2, STP has provisions for shutting down in anticipation of a hurricane, albeit the STP procedures also include provisions for deviating from the NUMARC guidance when the shutdown could increase the likelihood of a loss of offsite power. In addition,

the staff found that in STP Units 3 and 4 FSAR, Appendix 19Q, (page 19Q-4), the STPNOC has committed (COM 19Q-1) to develop a procedure to cope with and to reduce the risk in responding to an approaching hurricane.

Based on the above, confirm that severe weather procedures in accordance with NUMARC document 87-00 will be developed. Otherwise, provide technical justification for not requiring a severe weather procedure.

Request for Additional Information No. 3731 Revision 0

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 08.02 - Offsite Power System
Application Section: 08.02

QUESTIONS for Electrical Engineering Branch (EEB)

08.02-***

RAI 08.02-15 S1

In response to RAI.02-15, the applicant stated that agreements would be put in place to establish the interfaces between the grid operators and STP operations and that ERCOT uses protocols, operating guides, and procedures for operation of the ERCOT grid which will support the offsite power requirements for STP. Additionally the applicant stated that STP will have a formal interconnection agreement with the Transmission Service Provider (TSP) which will require notification to STP prior to and during maintenance activities and prior to removing transmission lines from service and for STP to review and concur with proposed changes to the switchyard.

The staff acknowledges the applicant's commitment that the Interconnection Agreement between STP and the TSP will be established as indicated above. The applicant's response, however, failed to address communication between STP and TSP regarding risk-sensitive plant maintenance activities, such as removal of an emergency diesel generator from service. The staff requests that the applicant address this area of communication. Additionally, the staff requests that the applicant confirm if a quantitative or qualitative grid reliability evaluation will be performed at STP 3 & 4 as part of the maintenance risk assessment required by 10CFR 50.65(a)(4) before performing grid-risk-sensitive maintenance activities in the switchyard.

08.02-***

RAI 08.02-16 S1

In response to RAI 08.02-16 pertaining to periodic testing of offsite equipment, the applicant addressed and provided details pertaining to inspection activities of the switchyard and its components. Additionally, the applicant identified the standards and guidelines that will be used for maintenance activities. The staff acknowledges the information provided by the applicant.

The applicant, however, did not provide any information on battery discharge testing, relay testing, circuit breaker timing test, potential and power transformer testing, ground grid testing, and arrester testing. Please address these tests along with the periodicity for these tests.