PMSTPCOL PEmails

From: Tai, Tom
Sent: Tuesday, May 19, 2009 9:28 AM
To: Agles, James
Cc: STPCOL
Subject: Draft RAI 2352 for Chapter 9.5.1
Attachments: RAI 2352 09.05.01-xx.doc

James,

Please review the attached RAI (09.05.01-xx). 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 RAI to STPNOC.

Regards

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Hearing Identifier: SouthTexas34Public_EX
Email Number: 1254

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From: Tai, Tom

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Recipients:
"STPCOL" <STP.COL@nrc.gov>
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"Agles, James" <jaagles@STPEGS.COM>
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Request for Additional Information No. 2352 Revision 2

South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 09.05.01 - Fire Protection Program
Application Section: 09.05.01, 9A, 9B, & 9E

QUESTIONS for Fire Protection Team (SFPT)

09.05.01-***

Spurious Actuations:
ABWR DCD Subsection 9.5.1.1.7, Spurious Control Actions states: "Two simultaneous, identical digitized control signals are required at the de-multiplexer for control action to be taken at the field device. The probability of two spurious signals matching is essentially zero."

Although this makes a good case for preventing multiple spurious signals being generated by the devices that normally cause the actuation signals to be sent, control devices are only one link in the chain that causes a component actuation. The NRC staff recognizes that fiber optic cables are not susceptible to spurious actuations; however, the same cannot be said for other types of cables, such as any power cables or other hardwire cables, or equipment, to include digital equipment cabinets. The applicant is to address the adverse effects (spurious actuations) of fire and smoke on cables other than fiber optic cables and electrical equipment including digital equipment. Is there a potential for direct electrical shorts that bypass the digital signal? Are there any common or shared equipment amongst the safety trains whereas a spurious actuation in one train limits or nullifies the capability of another train? For example, a spurious actuation in train A opens a valve to the shared CST tank thus draining the tank and leaving it unavailable to all other trains.

In departure T1 3.4-1, STP has stated that they will not be using the de-multiplexer type system as described in the ABWR DCD. Such a departure to the DCD digital I&C system may affect the design basis behind ABWR's multiple spurious probability assumption. As such, STP is to reconsider subsection 9.5.1.1.7 and address any potential for spurious actuations within STP's new proposed digital I&C system.

STP is to evaluate the potential of the adverse effects of smoke on plant's electrical systems (including the digital system) and include provisions with descriptions to limit smoke travel to within a single fire area.

In addition, STP FSAR Subsection 9E.5.5.2 states that the applicant's "...[Alternative/Dedicated Shutdown] procedures address necessary actions to compensate for spurious actuations and high-impedance faults if such actions are identified in the Fire Hazards Analysis to effect safe shutdown." This contradicts the statement in DCD Subsection 9.5.1.1.7. The applicant is to clarify.

09.05.01-***

Water Supply:
ABWR DCD and STP FSAR Subsections 9.5.1.3.5 both describe the fire protection water supply. However there are several clarifications that need to be addressed:

1) What is the source of the fire protection water supply for STP Units 3&4? STP FSAR 9.5.1.3.5 indicates "two storage tanks" shared by Units 3 and 4. However, it is not clear whether these are dedicated fire water storage tanks or water tanks that are shared amongst various systems.
2) What is the capacity for each of the fire protection water supply tanks? The ABWR DCD mentions both 1140 m3 and 546 m3 - the COL applicant is to identify the actual size of these tanks.
3) What is the design basis for the capacity of the water supply? If using the minimum numbers in RG 1.189 (Rev. 1), have calculations based on the ABWR design been performed to verify these minimum numbers are indeed sufficient?
4) DCD Subsection 9.5.1.3.5 states that the water supply is required to be fresh water but filtered if necessary. However, the STP FSAR does not state whether or not filtering of the water supply will be necessary. How will the water quality be maintained in accordance with NFPA 13, 14, 22, & 24? The system or process is to be explained.
5) The applicant is to explain the refilling process for the fire water supply tanks. Also verify that the refilling can be completed within 8 hours in accordance with RG 1.189 (Rev. 1).
6) STP FSAR Subsection 9.5.1.3.5 state that the fire protection water supply will be shared between Units 3&4. Will this water supply also be shared with existing Units 1&2? Will there be any cross-connection into the existing (Units 1&2) fire protection water supply (existing main loop)? If so, consideration is needed and to be described to deal with isolation abilities between the two systems and how the much older existing system will not degrade the new fire protection water supply for Units 3&4.
7) Applicant is to verify that the plant fire protection system hose threads and other appropriate threaded connections (hydrants, standpipes, fire department connections, etc) will be compatible with the equipment used by the local offsite fire departments.
8) Applicant is to verify that fire protection system and component maintenance will be in accordance with the applicable NFPA codes.

09.05.01-***

Fire Brigade Communications:
The applicant is to provide a communication design appropriate for use by the fire brigade in accordance with RG 1.189 (rev. 1) Position C.4.1.7. The applicant has described the communication system in FSAR Subsection 9.5.13.14 which eludes to the fire brigade using the plant's 'two way radio' 'portable radio communications system'. It is not clear if the 'two way radio' provides complete plant wide coverage or only coverage to safety-related areas. RG 1.189's intent is that all areas important to safety shall have portable radio coverage. Will there be a dedicated channel available for fire brigade purposes during an emergency? The applicant must make clear that the components (equipment, power cables, antenna) are free from fire damage and ensure complete radio coverage to all covered areas during a fire, including inside the fire area.

FSAR subsection 9.5.13.14 states that the 'Telephone System' and the 'Maintenance Jack System (DC/Sound-Powered)' systems are fixed communications systems and available to the fire brigade during emergency safe shutdown and fire fighting operations. Where will the 'telephone'/'maintenance' stations/handsets be located? What is your basis for determining which areas get a fixed telephone and maintenance jack station?

FSAR Figure 9.5-2 shows the "Radio Equipment" interfacing with the "Main Paging Equipment". FSAR subsection 9.5.2 appears to indicate these two systems are independent and Figure 9.5-2 displays the communication interface only. However, the applicant is to clarify that, since the fire brigade is relying on this "Radio Equipment", there is no potential for common mode failure initiated within the "Main Paging Equipment" that would also render the "Radio Equipment" inoperable.

09.05.01-***

Fire Brigade:
STP RCOLA describes the fire brigade program elements in Appendix 9E. It is acceptable to the NRC to have one fire brigade for multiple units within a single plant/site. However, the applicant is to clarify on whether STP plans to have one fire brigade for all 4 units (Units 1&2 are existing nuclear units) or two fire brigades - one for Units 1&2 and another for Units 3&4. The applicant must address the fact that Units 1&2 are of a different design that present different fire protection systems as well as different safe shutdown equipment and procedures. This difference greatly impacts the fire brigade on all levels from training to personnel to equipment to strategies/procedures. The applicant must address these issues and why they think their approach is acceptable in meeting the intent of RG 1.189 (Rev.1) and the goals of 10 CFR 50.48.

09.05.01-***

Operator Manual Actions:

The applicant is to clarify and describe if any operator manual actions outside of the main control room that will be credited for post-fire safe shutdown operations. The applicant is to explain why such actions are required and describe compliance with regulatory guidance for operator manual actions (e.g., RG 1.189, Rev 1 and NUREG-1852).