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To: [Buckberg, Perry](#)
Subject: Information for Monday's FRP Call
Date: Thursday, July 10, 2014 3:27:33 PM
Attachments: [RAI 7481 Q09 02 01-15 R1 Response DRAFT for Discussion.pdf](#)

Perry,

Please distribute this email to everyone on your end that will be attending the FRP call on Monday afternoon. For discussion purposes, I have attached a draft markup of how we intend to revise the response to RAI 9.2.1-15. Changes are marked in red.

Additionally, I have received some information regarding the Fire Hazards issue from Mike Arcaro (GEH SME), which I have included below in blue. Mike will be available on Monday to discuss.

As an action from our NRC FRP call last week, I looked at **NA3 TB fire** and the potential impact on **PSW FRP piping** in the TB fire areas (see attached). While piping layout is still conceptual, Plant Service Water (P41) piping will most likely be routed to / from the Service Water Building (Bld 77) to the SE corner of the TB in two trains. This is the area where the FRP / carbon steel transitions will be located. As reflected on the preliminary P&ID (SR3-1-P41-PID-0001-01) a piping branch from each train will supply TCCW (P22) heat exchangers at the -1400 elevation and a branch from each train will be provided to the RCCWS heat exchangers at the 4650 elev.

- Piping associated with the two RTNSS C of PWS Trains will be physically separated with respect to electrical, fire and flooding. [DCD S9.6.2.6]
- Non-RTNS PSW SSC (TCCWS-P22) located in TB -1400 elev. can be isolated from PSW RTNSS Subsystem SSC (piping) to prevent adversely impacting RTNSS functions
- PSW piping routed up to RCCWS (P21) heat exchangers at TB 4500 elev will be routed in separate fire areas with separation requirements with respect to electrical, fire and flooding.
- PSW piping to RCCWS heat exchangers at TB elev. 4500 is routed and located in separate fire areas for each train (F4250 / F4260 of DCD Figure 9A.2-13)
- Fire areas containing safety-related or RTNSS equipment shall be separated from fire hazards exterior to the building. [SR3-1-A11-TRD-2009R2]
- Type: Design Detail Description: Per DCD Tier 2, Subsection 9A.4.9, the Service Water/Water Treatment Building (SF/WT) contains Service Water equipment, which has Regulatory Treatment of Non-Safety Systems (RTNSS) functions. Fire barriers of three hour minimum fire resistance rating shall be provided separating redundant RTNSS trains. Therefore, fire areas F7300A and F7300B are assumed to replace the existing fire area F7300 for the SF/WT building. System: P41[Ref PRA Design Assumptions A084]
- The cabling for reactor component cooling water (RCCW) system and plant service water (PSW) system is assumed not to be failed by a fire in F4197 (TB

General Area) since these two systems have been identified as part of the Regulatory Treatment of Non-Safety System (RTNSS) program. The design requirements for RTNSS systems assure that a postulated fire would not damage both trains. Moreover, the cable routing can easily bypass the turbine building general areas. [NEDO 33201 S12.8.4.1 Fire PRA]

- Complete Loss of PSWS The ESBWR Plant Service Water Systems (PSWS) is designed with a high level of redundancy and diversity. Reactor Component Cooling (RCCW), which is grouped within the Complete Loss of PSWS initiator category (refer to Subsection 2.2.3.9), also has a design with a high level of redundancy considering the normal operational requirements (two out of six pumps and heat exchangers). Given the design of these ESBWR systems, the frequency based on NUREG/CR-5750 is $9.7E-04/\text{yr}$. [PRA NEDO 33201 R6 S2.3.4 Special Initiators]

Thanks and have a great weekend,

Ben Evans

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