S. Schwind (RIV) S. Cochrane (RIV)

RA-9A-17

From: "Flaherty, James R." <jrflahe@nppd.com>
To: <scs@nrc.gov>, <sdc@nrc.gov>
Date: Wed, Jul 14, 2004 7:27 AM
Subject: FW: Discussion of GW-SW Timeline with NRC and Status of Vendor Discussions

I have training all morning so won't get over to meet with you until lunch time. Here is some preliminary information on the status of the SW Gld Water activities, with the intent to meet with you late Thursday or Friday morning with the report. Please treat this as preliminary information with the appropriate details and corrections to be presented by Kent and others as noted. Status updates are included in both Red and Blue below.
Jim
-----Original Message-----
From: Sutton, Kent E.
Sent: Tuesday, July 13, 2004 7:55 PM
To: Hottovy, Todd E.; Fleming, Paul V.; Kline, Gary J.; Flaherty, James R.
Cc: Seeman, Glen A.; Sutton, Kent E.
Subject: Discussion of GW-SW Timeline with NRC and Status of Vendor Discussions
Importance: High

Update on loss of GW supply to running SW pump:

UPDATE: Wednesday morning we are discussing the vendor evaluation of postulated loss of GW on the CNS SW pump with Dave Loveless. We will discuss the conclusions of the evaluation performed by Johnson Pump over the weekend. Steve Phillips reports Mike Cugal at Johnston Pump is completing the report which meets ANSI N45.2.11. A rotor dynamic analysis indicate fundamental (vibration) nodes all much slower than the running frequency. Based on these calculations and input from field personnel no near term catastrophic failure is predicted. To assure technical correctness all the dimensional inputs and assumptions are being revalidated tomorrow. Dwight Vorpahl and Steve are working to supply CNS specific motor information that will support assumptions. Johnson Pump expects the final report to be available Thursday, July 15, complete with internal signatures.

We also plan to have R. Noon, et. al. present these conclusions along with technical discussion of pump fundamentals to Scott Schwind when the final report is available, ie. Thursday pm or Friday am. The exact schedule will be determined tomorrow after discussions with Dave Loveless.

-----Original Message-----
From: Sutton, Kent E.
Sent: Sunday, June 27, 2004 11:21 PM
To: Hottovy, Todd E.; Fleming, Paul V.; Kline, Gary J.; Flaherty, James R.
Subject: Discussion of GW-SW Timeline with NRC and Status of Vendor Discussions
Importance: High

I contacted Region IV D. Loveless on Friday, highlights of the conversation are listed.

The 90 day clock has not started on the GW-SW condition, and will not start until the date the condition is "first" published (Resident Inspection Quarterly Exit report, which apparently will be sometime in mid, to late July.) However, Dave will be submitting his final GW-SW conclusion of White to HQ mid-July. The HQ is already reviewing portions of his assessment (from the Cert board interaction.) Dave was curious if Johnson Pump thought >60 minutes was reasonable, he is willing to use this information in his final assessment to HQ. I indicated the vendor was reviewing our white paper and appear to be supportive of our request. We will be expediting this work in order to get a vendor memo on the conclusion in time to allow Dave agree with Green risk significance in mid-July. I plan to keep Dave informed of our progress, since he agrees the 30min availability of SW pumps without GW is the single most important assumption in the analysis. Gaining an additional 30 minutes will ultimately give the margin needed to make the

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conservative SPAR analysis agree with our detailed PSA model - the condition has green significance.

David is aware that we have requested the vendor investigate expected pump performance given loss of GW on running SW pump. He requested that CNS provide this information by mid-July so he could factor in the new information. Since that time D. Loveless has been in discussions with his management on how to proceed with the information. He was not prepared to discuss until the vendor results were available in mid-July.

Our stated objective remains "Establish green significance and avoid a Reg Conf on this issue". This gives us less than three weeks to pursue information from Johnson Pump. I spoke with Thomas Smith, Division manager of Engineering, at Johnson Pump Saturday morning (via his personal cell phone as he has been out-of-town.) He is commited to providing the resources needed to support delivery of a vendor letter by July 12. (This assumes that they find the CNS white paper an acceptable arguement for eliminating the catastropic pump shaft siezure as a credable failure mode.) At this point I have requested a follow-up discussion with him Tuesday morning, as he travels Monday.

The dynamic pump analysis of shaft vibration performed by Johnson Pump has established that the fundamental vibration frequency is much lower than the pump speed. The rigidity of the pump shaft is sufficient to precluded catastrophic failure of the shaft due to vibration between failed cutlass bearings. The analysis was conclusive enough to provide a conclusion without extensive pump testing. Due to the detailed evaluation performed by the vendor, the results of the analysis were not available until today, with final report to be provided on Thursday, July 15. As mention above, we will discuss these findings with the SRA tomorrow morning and the resident when the final report is available for review.

In addition, Dave has asked for clarification regarding use of our Level 2 PDS information with his SPAR sequences and the results of our focused Fire PSA in the critical switchgear room (bus 1F impact.) We will probably need to talk him through various LERF multipliers associated with sequences defined in SPAR. A trip to Region IV for information exchange may be in order, we first need to clarify his issues next week.

In the SPAR analysis the critical switchgear room fire was assumed to cause loss of all equipment on bus critical bus 1F (Division 1)1. This conservative assumption causes this sequence to be significant. Applying a conditional probability of unmitigated fire resulting in critical bus 1F failure is more appropriate. However, given the SW pump is available for more than 60 minutes will alleviate the impact of this conservative sequence.

Currently David Loveless is applying Phase 2 SDP containment analysis to the Phase 3 internal event analysis. This is causing the station blackout sequences to be greater than green for LERF. We have provided our PSA Level 2 containment multipliers for LERF which indicate the SBO sequences are not significant for this condition. Again, given that SW pump continues to run for more than 60 minutes will alleviate the impact of this conservative treatment.

We should search OE information on large vertical pumps, including circulation, service and fire water pumps, to see what experience there has been related to loss of gland flow or bearing degradation effecting pump operation. I do not believe Johnson Pump has this type of information, but should be included to give the vendor memo more credibility.

Steve Phillips obtained industry OE from EPRI pumps users group, INPO OE database search and Entergy Nuclear. Generally, OE indicates that no record exists for running pump failure as result of loss of GW supply. This information was provided to Johnson Pump for consideration.

Monday morning, I will be requesting help in the form of an engineering team to work with Johnson Pump to ensure we get the critical information needed in a form that is acceptable for use by the NRC. The CNS Team members: 1) Steve Phillips, 2) Randy Noon, 3) Jim Flaherty or Sumpter(?), 4) Seeman and 5) Nelson.

Update: Team members were Seeman, Noon, Phillips and Sutton. Dwight Vorpahl supported the team as needed.

Any questions or concerns, please advise.

Kent
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