Shearon Harris Fire Protection Inspection -
Questions for licensee after week two of inspection

Given by Phone to David Baksa on November 21, 2002

1. Please provide drawings / description of the interior design of MCC 1A35-SA and MCC 1B35-SB, showing how breakers are physically separated and to what extent that separation would restrict a fire initiating in one breaker cubicle from spreading to other breakers.

2. Please show evidence that fire dampers are installed in the ventilation exhausts located in the cieling of fire SSA areas 1-A4-BAL-B-B4 and -B5 (above MCC 1B35-SB and MCC 1A35-SA).

3. Please provide a copy of the procedure (that was in effect at the start if this inspection) that operators would have used to align the 'C' charging pump to the 'B' train or the 'A' train in the event of a fire in SSA area 1-A4-BAL-B-B4 or -B5 in response to the failure of the operating charging pump due to hot shorts in the MCC. How long would the alignment take? (NOTE: The IPEEE states that alignment of the 'C' pump to the 'A' train could take as long as eight hours.) In addition, please provide procedures that operators would use to place the 'A' or 'B' train of charging in service in the event of a fire in SSA area 1-A4-BAL-B-B4 or -B5 and in response to the failure of the operating (other train) charging pump due to hot shorts in the MCC.

4. Please review for us the feasability of an operator entering containment to manually align an RHR valve per AOP-36 after a fire in Electrical Penetration Room A. What would the atmospheric conditions inside containment be after venting the pressurizer to cool down on natural circulation and after dumping the nitrogen into containment from the acumulators? What protective clothing & equipment would your H.P. procedures require? What path would the operator have to travel (e.g., tight spaces, climbing ladders) to get to the valve and how good is his access to the valve to manually operate it?

5. Please show any control room indication there would be of a charging system min-flow valve closing during a fire as a result of hot shorts. Would there be any alarms?

6. Please provide a copy of your recent self-assessment on post-fire safe shutdown.

7. Please have someone prepared to review your answer to question 61, which calculated that the BAT would not go dry when using it as the charging pump suction source via gravity drain and with no BAT level indication. My analysis is that the BAT would go dry if the charging pump were run continuously (per AOP-36) during a natural circulation cooldown that would take several hours. How long would a natural circulation cooldown take?

8. Please have someone prepared to review your answer to question 108 related to charging pump starting duty limits and comparing them to AOP-36 steps for cycling the charging pump on and off to maintain pressurizer level. I do not follow your analysis of

NRR/32

how long it would take for the pressurizer level to decrease from 51% to 25%.

Given by Phone to David Baksa on December 2, 2002

1, For a large fire (as in the IPEEE) in SSA areas 1-A-BAL-B-B1, -B2, -B4, -B5; or EPA;

   a. Will the fire cause a loss of offsite power, reactor trip, or other event initiator?

   b. What functions will the fire affect? E.g., will it cause a loss of all main feedwater, a loss of 1 (of 2) trains of low pressure injection, a loss of 2 (of 3) trains of auxiliary feedwater,...etc?

2. Please provide a copy of the procedure change(s) and safety evaluations to determine that the changes did not adversely affect safe shutdown, for adding the operator actions in AOP-36, Attachment 1, Fire Area 1-A-BAL, Safe Shutdown Analysis Area 1-A-BAL-B, step 1, to verify open and denergize the following three valves:

   - 1CS-214, charging/SI pumps miniflow;
   - 1CS-169, CSIP suction header x-conn; and
   - 1CS-218, CSIP discharge header x-conn.

3. What is the design minimum flow for a charging pump? (i.e., If the miniflow line was closed, what is the minimum flow that would need to be maintained through a charging pump to prevent pump damage?)

4. In the event of a fire-induced loss of the charging system, please show what procedures operators would use to control the plant. Would they trip the reactor?

5. What are the SSD Division 1 and Division 2 functions of 1CS-217 and 1CS-218? Note: the SSA indicates a Division 2 function of 1CS-217 to remain open; should it instead be to close?

6. The CVCS P&ID for SSD shows that CVCS valves in the RCP seal injection flowpath have only an SSD Division 2 function. How are RCP seals protected in SSD Division 1?

7. The safe shutdown cable separation analysis (SSSA; Calculation E-5524), Attachment B, indicates some needed manual actions for fire area 1-A-BAL-B that we did not find in AOP-36. Please explain the need for these actions and why they are not in AOP-36:

   - De-energize dampers D69SA and D70SB control circuits (pgs 9, 16, and 27);
   - Action associated with 125 VDC DP-1A (pgs 10 and 21);
   - Restore 1SW-E5 (pg 15) [note: this action is from the control room, but not in procedure];
   - CVCS AOVs 1CS-559 and 563 (pg26); and
   - Some ESW related actions associated with 1SW-270 and 276 (pg15) [These actions are in AOP-036, Attachment 1, step 21. However, since the actions are required for hot shut down but are late in the procedure, will they be completed in an adequate time?]

Not Yet Given to Licensee

1. What is the actual wiring configuration for the control power for each of the seven valves of concern because of vulnerability to hot shorts and spurious actuations? The seven valves are: 1CS-169, 1CS-214, 1CS-218, 1CS-219, 1CS-165, 1CS-168, and 1CS-166.

   - How many wires are in each cable?
   - Are the cables shielded? Are the wires twisted?
   - What is the normal voltage on each wire?
   - Please provide a control circuit schematic showing the function of each of the wires in each cable (for 1CS-218, 1CS-219, and 1CS-168).
   - Please provide a cable & raceway schedule (cable routing) for 1CS-169, 1CS-214, 1CS-218, 1CS-219, and 1CS-168.