# NRC Question Response Form

Request Number: 3.c Status:

Requested By *(Inspector name)*: Date Requested:
Question / Document Request: (Q) D *(circle one)* System:
Detailed Question or Request:

In regards to HRA Evaluation for establishing going to recirculation (Operator failure to locally open the Cont. Sump B Recirculation Valve) in Section 5.10 of V.SPA 10.008, Addendum 5, Rev. 0:

**Q: Can the Containment Sump B to RHR suction motor valve (MOV) be opened within the allotted time frame?**

**Q: Give specifics on the Containment Sump B to RHR suction MOV. (What does it take to open the MOV? For example: Where is it located? Is it easy to access? How hot is the area? Does the HELB impact the access?)**

**Q: How did Xcel validate the assumption that the Containment Sump B to RHR suction MOV is easy to operate?**

Initiated By *(individual taking the request)*: J. Ritter

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Assigned To: Doug Smith Date Assigned: July 13, 2010

**CAP / Work Order Issued? Yes (No)** *(circle one)* Number:_____

Response (include a list of documents provided):

According to the MAAP results delineated in Question 3.a, there are approximately 3 hours available to open the containment sump B suction motor valve after RWST level reaches 33% but before core temperatures would exceed 700 deg. F. Three hours provides adequate time to open the valve. This conclusion is based on actual experience with manual manipulation of the motor valve during outage surveillance testing and operator walkthrough and interviews. Further details are provided below. Also, as stated in the response to Question 3.a, the predicted manipulation time to open the containment sump B suction MOV is 38 minutes.

The ability to open the sump recirculation MOVs (MV-32077 and MV-32078 for Unit 1 and MV-32180 and MV-32181 for Unit 2) was confirmed based on operator interviews,

procedural reviews, and MAAP analyses. The containment sump B motor valves are located in the containment pump spray room on the 695' elevation of the auxiliary building. These rooms and valves are easily accessible. The valves are standard motor-operated valves each equipped with a LimitTorque operator. The valves are manually operated by moving the clutch lever and turning the handwheel. Three of the four valves can be operated while standing on the floor with the handwheel at about chest height. The fourth valve handwheel is also at chest height, but requires standing on a support to operate the handwheel. The valves are locally operated for about 300 turns during refueling outage surveillance testing. Operators who have performed the local operation were interviewed regarding level of difficulty when operating the valve by handwheel. The operators stated the valve had some resistance for the first 20 turns and then turned easily with one hand using the handwheel handle.

The operators are familiar with the valve location since the valve bonnets are locally vented by the operator in Attachment K of 1ES-1.2 (2ES-1.2), TRANSFER TO RECIRCULATION for transferring the RHR system to containment sump recirculation during LOCAs. It is expected that the auxiliary building operators would perform any operations of the recirculation sump valves. The auxiliary building operators are normally stationed inside the auxiliary building; therefore the operators do not have to proceed through access control before gaining access to the containment spray pump room. The impact of a turbine building flood event on accessibility to the MOVs will be evaluated in a separate response. (See Question 23.) It is expected that the impact of flooding will be minimal.

From AR 01143172, Evaluation of Temperatures in the Auxiliary Building:

> *The original design of the Auxiliary Building Normal Ventilation (ZD) system was to maintain temperatures of 10 °F or less above the outdoor ambient in critical area; i.e., motors, instrumentation, etc. Following initial design, the Containment and Auxiliary Building Cooling ( ZX) system was added to supplement the building cooling by providing addition unit coolers throughout the building. These systems function to maintain the building temperatures to support equipment operation. Neither of these systems is credited during post-accident mitigation. During normal operation, the significant heat sources to the Aux Bldg are the Main Steam (MS) and Feedwater (FW) system piping. Following an accident, the MS and FW systems are isolated; which removes a significant heat source from the building; which provides part of the basis for why cooling is not required during post-accident mitigation.*

The ambient temperature in the containment spray pump room varies from between approximately 70 degrees and 90 degrees. The only heat source into the room is from RHR fluid, if above ambient temperature, and containment spray pump motor heat, if running. For the flooding events with offsite power available, normal ventilation would maintain existing temperature. If the event results in loss of offsite power, then room temperature may warm slightly, however there is no heat input source since the containment spray pumps are not operating and RHR fluid temperature, if running would

be at RWST temperature. If safety injection is actuated, then normal ventilation is automatically secured and Aux Building Special Ventilation starts with exhaust only from specific areas, including the containment spray pump rooms. For the flooding scenarios, there still would be no heat input sources in the CS pump rooms. Thus, the expected temperature in the valve area is expected to be approximately 90 degrees or less.

**Is this an equipment issue that affects plant operability?** ☐ **Yes** ☒ **No**

**If yes, contact the Shift Manager immediately.** _____

**Date/Contacted By**

Completed By: Doug Smith / Jayne Ritter Date Completed: 7/16/10

Peer / Tech Review / Validation By: Raymond Dremel per email Date Completed: 7/16/10

Team Leader / Supervisor Review / Approval: _____ Date Completed: 7-16-10

**Additional Info Attached? Yes /(No) [forward a copy to Regulatory Affairs]**

# NRC Question Response Form

## Reviewer Verification Guidance

- Data Requests:
  - Is the information provided complete? Was any material removed from the information provided?
  - Is the information provided correct? Was the preparer of the response a subject matter expert?
- Information Requests:
  - Does the response answer the question being asked? Is the response on topic and clear?
  - Are inputs and assumptions appropriately validated?
  - If there is an embedded calculation, is the math correct?

- Is the response well formulated? Was enough work put into the response?
- Does the response reflect a differing professional opinion between the preparer and the inspector? Is the response professional in tone? Is the response argumentative?
- Is there a condition adverse to quality? Has a CAP been initiated?