

Audit Question Processing Form

Control Number:

(For Staff use only)

AQ-71

Question Initiated By: Smith, Caswell

Date: 7/21/2003

Regulatory Basis for Question:

Question:

DCR 91-134 describes the logic for the electrical backup for SRV actuation as being 1 out of 2 taken twice. However, this DCR as implemented does not appear to have such logic and the implemented logic appears to have some un-intended consequences. How was this DCR reviewed and what were the post modification test requirements? Was the DCR specifically reviewed for its potential impact on post fire safe shutdown?

Response:

The back-up SRV actuation logic as designed per DCR 91-134 represents one-out-of-two taken-twice logic which is consistent with logic concept per GE design specification for Plant Hatch systems. An example of GE specification and schematic diagram of similar one-out-of-two-taken-twice logic utilized in HPCI system is attached for reference. The one-out-of-two-taken-twice logic, for a normally de-energized system which is energized to trip, provides logic where two signals are connected in series by either, combining one signal from each channel of the same train or by combining one signal from one channel of each of the two trains. The electrical back-up SRV logic is a normally de-energized logic, and is required to be energized on reactor vessel high pressure to actuate the SRVs. The one-out-of- two-taken-twice logic as designed per DCR 91-134 satisfied the above requirements. The logic as issued per DCR 91-134 also assures that a single failure (e.g. loss of one division station battery) will not prevent the required opening of electrical back-up SRV on Reactor vessel high pressure.

DCR 91-134 was checked and reviewed in place at the time the DCR was processed in accordance with appropriate DCP preparation procedures for technical adequacy, failure modes and impacts on systems and component as per the Plant licensing basis which does not include consideration of multiple hot shorts. Plant readiness review committee also reviewed the DCR 91-134 package for completeness, feasibility and impacts to the plant.

DCR 91-134 provided the post modification functional testing requirements in items 1 through 5 of the function testing requirement section of the DCP per the Plant licensing basis which does not include consideration of multiple hot shorts.

DCR 91-134 was also reviewed specifically for its impacts on post fire safe shutdown per the appropriate engineering procedures for DCP package preparation, and as per the Plant licensing basis which does not include consideration of multiple hot shorts.

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Response by: Rathod, Jitu

Reviewed by: _____

Staff init: JW-4

NRC Status: In Progress

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Consequently, the modification as issued under DCR 91-134 does not introduce un-intended consequences.

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Response by: Rathod, Jitu Reviewed by: _____ Staff init: _____

NRC Status: In Progress