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November 25, 1998

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Dresden Nuclear Power Station, Units 2 and 3
Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Dresden Nuclear Power Station Units 2 and 3
Regulatory Guide 1.97 Closeout
NRC Docket Numbers 50-237 and 50-249

- References:
- (a) B. Boger (NRC) letter to C. Tully (BWROG), NRC Evaluation of BWR Owners' Group Topical Report NEDO-31558, dated January 13, 1993.
 - (b) M. J. Vonk (ComEd) letter to USNRC, Compliance with Regulatory Guide 1.97, (Neutron Flux Monitor), dated November 12, 1993.
 - (c) J. M. Heffley letter to USNRC, Regulatory Guide 1.97 Closeout, dated May 7, 1998.

The purpose of this letter is to provide information supporting closeout of the open Regulatory Guide 1.97 items as they relate to the adequacy of the Neutron Instrumentation System during post-accident monitoring at Dresden Nuclear Power Station. In response to the requirements in Regulatory Guide 1.97, the BWR Owners Group (BWROG) developed a set of alternate criteria for Neutron Instrumentation, which are outlined in GE report NEDO-31558, Requirements for Post-Accident Neutron Monitoring System. The NRC Staff approved NEDO-31558 in Reference (a). The NRC required ComEd to submit an action plan to ensure existing designs met the sixteen criteria contained in NEDO-31558. Our response was submitted in Reference (b).

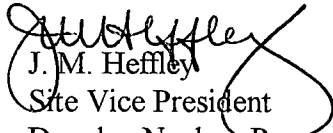
In Reference (b), ComEd closed the majority of the requirements in NEDO-31558; however, four items were deferred pending further evaluation. Two of the four items were subsequently closed by ComEd as described in Reference (c). The attachment to this letter provides the closure basis for the remaining two items. ComEd plans no further actions on this issue.

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Should you have any questions concerning this letter, please contact Frank Spangenberg,
Regulatory Assurance Manager at (815) 942-2920, extension 3800.

Respectfully,


J. M. Heffley
Site Vice President
Dresden Nuclear Power Station

Attachment: Regulatory Guide 1.97 Closeout

cc: Regional Administrator – Region III
Senior Resident Inspector – Dresden Nuclear Power Station

Attachment

Regulatory Guide 1.97 Closeout

1. NEDO-31558 Item 4: EQ Requirements - Operate in an Anticipated Transient Without Scram (ATWS) Environment

Original Commitment

In the response to NEDO-31558, Dresden Station committed to evaluate the impact of a postulated ATWS on the Local Power Range Monitor (LPRM) components following the BWROG review of equipment qualification requirements for an ATWS environment.

Assessment

For the purposes of post-accident monitoring, NEDO-31558 requires the Average Power Range Monitor (APRM) indication (which is determined by the Local Power Range Monitor LPRM inputs) to remain functional during an ATWS to allow the station operators to monitor power level and execute the appropriate emergency procedure actions. In general, this is not an issue with BWRs because an ATWS event does not produce harsh conditions in the primary containment. However, Dresden Station is equipped with safety relief valves that vent directly to the containment atmosphere. For this reason, the containment environment may degrade significantly during an ATWS. General Electric (GE) has prepared a bounding analysis (GE-NE-C5100121-01) that evaluates the containment response during an ATWS event for plants with safety valves that vent directly into containment. ComEd has performed an engineering evaluation that assessed the performance of the LPRM/APRM system during an ATWS event. The evaluation concludes the APRM indications will remain functional for a sufficient duration to facilitate emergency procedure execution, and thus meet the alternate requirement in NEDO-31558. The engineering evaluation focused on the following components: the LPRM connectors (both LPRM and cable ends), the LPRM cabling located inside primary containment, and the cable splices at the LPRM electrical penetrations (primary containment penetrations). A summary of the evaluation is provided below.

LPRM Connector Review

The currently installed connectors at Dresden Station (both the cable end and LPRM end) were procured and installed per the GE original equipment specifications. During abnormal conditions, the GE specifications require the connectors to be designed for a temperature profile of 300°F for the first ten minutes followed by 250°F for the following 10 hours with a 100% humidity factor. ComEd has confirmed that these specification requirements for abnormal conditions bound the expected primary containment environment presented in GE-NE-C5100121-01. Therefore, the connectors (LPRM and cable ends) meet the qualification requirements of NEDO-31558 item #4.

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Cable Review

The LPRM cabling located inside containment is supplied with Rayolin-R insulated cable and jacket or polyethylene (or equivalent) insulated cable and jacket. Cabling with the same type of insulation and jacket as that installed in the drywell has been subjected to environmental testing based on the guidelines of IEEE Standards 323-1974 and 383-1974. The inside-containment-conditions to which the cable is qualified bound the ATWS conditions. The cables demonstrated acceptable performance throughout the qualification testing. For the reasons stated above, ComEd considers the LPRM cabling to meet the qualification requirements of NEDO-31558 item #4.

Electrical Penetrations

The cable electrical penetrations and associated Raychem splices are fully qualified under the Dresden Station Equipment Qualification program. These qualification requirements exceed the requirements of a postulated ATWS environment as determined in GE report GE-NE-C5100121-01. Therefore, the LPRM cable penetrations meet the qualification requirements of NEDO-31558 item #4.

The LPRM/APRM system is designed for conditions that meet or exceed the postulated ATWS conditions inside primary containment. The LPRM/APRM system will provide adequate indication to allow the successful execution of the emergency procedures. Although the accuracy of the APRM readings may be affected, the APRM indications will remain functional. As discussed in Reference (c), the decision to inject boron to protect primary containment during an ATWS event is predicated on degrading containment conditions and is independent of APRM readings. For these reasons, ComEd considers the LPRM/APRM system to meet the alternate requirement #4 specified in NEDO-31558.

2. NEDO-31558 Item 10: Limited QA Requirements (GL 85-06)

Original Commitment

In the response to NEDO-31558, Dresden Station committed to identify and locate all non-safety NMS components in the Master Equipment List (MEL) and assign augmented quality standards to these items consistent with Generic Letter 85-06.

Assessment

Dresden Station component classification engineering procedure requires augmented quality designation for non-safety related ATWS equipment consistent with GL 85-06. This criterion has been applied to the NMS monitoring equipment to support ATWS events. The NMS equipment that is currently classified as non-safety related has been reviewed for their function in an ATWS

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event. These components have been assigned “augmented quality requirements” consistent with GL 85-06. ComEd considers completion of this action sufficient to close alternate requirement #10 in NEDO-31558.