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Downers Grove, Illinois 60515

February 10, 1992

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Byron Station Unit 1
Generic Letter 88-17 Implementation and
Hydrogen Monitoring System Modification
Tac Nos. M69727 and M74547
NRC Docket Nos. 50-454

Dear Dr. Murley:

The purpose of this letter is to provide the NRC Staff notification of completion of two activities, to which a commitment was made in prior correspondence. Both of the activities were completed on Unit 1 during the Fall 1991 refueling outage. Attachments A and B contain a brief review of the activity/issue and the completion date, for Generic Letter 88-17 Implementation and modification of the Hydrogen Monitoring System.

Please direct any questions you may have concerning these matters to this office.

Respectfully,

Terence K. Schuster
Nuclear Licensing Administrator

Attachment:

cc: A.H. Hsia - Project Manager, NRR
W. Kropp - Senior Resident Inspector, Byron
A. Bert Davis - Regional Administrator - RIII

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ATTACHMENT A

Generic Letter 88-17: Loss of Decay Heat Removal

The purpose of this Generic Letter was to increase reliability of decay heat removal (DHR) systems. Numerous events involving a total loss or degradation of residual heat removal capability have occurred throughout the industry. The NRC issued this generic letter pursuant to 10CFR50.54(f). The NRC required a two phase corrective action plan, expeditious actions and programmed enhancements.

Byron Station's response to the expeditious actions was transmitted to the NRC in a letter from R. A. Chrzanowski to T. E. Murley, dated December 30, 1988. The following actions were required:

1. Provide training on industry events involving loss of DHR.
2. Provide administrative control to ensure capability to close containment following a loss of DHR event.
3. Provide two independent, continuous core exit temperature indications when the head is on the vessel.
4. Provide at least two independent continuous RCS water level indications.
5. Implement procedures to avoid RCS perturbations while operating in a reduced inventory condition.
6. Provide at least two means of adding inventory to the RCS in addition to the RHR system.
7. Implement procedures and administrative controls to assure an adequate reactor head vent path is available.
8. Implement adequate administrative controls to assure that all hot leg stop valves are not closed unless a vent path is available.

All training, administrative controls, procedure changes and modifications proposed in this letter are in place.

Byron Station's response to the programmed enhancements was documented in a letter from R. A. Chrzanowski to T. E. Murley dated January 31, 1989. The following actions were required:

(Attachment A continued)

1. Provide reliable indication of parameters that describe the state of the RCS including: two independent RCS level indications, two independent core exit temperatures, monitoring of the DHR system and visible and audible indications of DHR system performance.
2. Develop and implement enhanced operating procedures covering reduced RCS inventory.
3. Ensure sufficient equipment is operable or available to mitigate a loss of DHR.
4. Conduct an analysis to provide a basis for response times for procedures and equipment used to mitigate a loss of DHR.
5. Submit Technical Specification changes to enhance reliability of the DHR system including a reduction in DHR minimum flow, removal of the autoclosure interlock and to permit availability of a safety injection pump.
6. Reevaluate and refine Item 5 of expeditious actions to assure the risk of a loss of DHR is minimized.

All of the above procedure changes, analysis, modifications and Technical Specifications changes are in place.

On September 27, 1991, the NRC issued Inspection Report 50-454/91020(DRP); 50-455/91020(DRP). In this report, the NRC concluded that all items for Generic Letter 88-17 were closed with the exception of the removal of the RHR autoclosure interlock (ACI) on Unit 1. The ACI modification was completed during October 1991. Based on the above, all actions required for Generic Letter 88-17 are complete and this issue is considered closed.

The NRC issued a supplemental letter on November 6, 1991, that also addressed an item relating to Generic Letter 88-17. In this report, the NRC stated that the effectiveness of the Generic Letter 88-17 corrective actions could not be judged because Byron has not operated with the RCS in a reduced inventory condition since their implementation. Therefore, the NRC required that we notify the NRC Region III office prior to entering mid-loop operations. This commitment is being placed in plant operating procedures. Based on this commitment, the Temporary Instruction (TI) 2515/103 pertaining to the actions required for Generic Letter 88-17 is considered closed.

Commitment satisfied:

Removal via modification, of the RHR suction valve high-pressure auto-closure interlock for each of the Unit 1 RHR trains during B1R04.

Date by which commitment was satisfied:

October 31, 1991

ATTACHMENT B

NRR Staff Concern regarding the Hydrogen Monitor System Design

In July of 1989, the Byron Station NRC Senior Resident Inspector identified a concern with the design of the Hydrogen Monitoring System and a statement made in the Byron/Braidwood UFSAR. The NRC staff questioned whether the Hydrogen Monitor design meets the single failure criterion. Specifically, the NRC staff was concerned that failure of one electrical ESF division, when the valves were closed, would prevent remote re-opening of one of the two isolation valves in each line and thus result in the unavailability of the hydrogen monitoring system. The NRC staff requested that Commonwealth Edison propose a design change to the system that would ensure both "containment integrity and indication of hydrogen concentration in the event of a single electrical failure."

Byron Station proposed to implement a modification to resolve the NRC staff concern. The existing design was revised by replacing the operator for one of the two containment isolation valves in each line with an operator that fails open upon a loss of power. The affected valves will be the Division 12 (22) valve in the Division 11 (21) hydrogen monitoring line (Valve 1/2 PS229A) and the Division 11 (21) valve in the Division 12 (22) hydrogen monitoring line (Valve 1/2 PS228B). As indicated in the previous sentence, an identical change is proposed for Byron Unit 2. This new design provides for two hydrogen sample lines each dependent on a single ESF division's power to perform its sampling function. At the same time, the containment isolation function can be achieved for both lines with only one operable ESF division.

The modification ensures availability of the Hydrogen Monitoring System in the event of a loss of one electrical 125 Vdc ESF division. Two separate Class 1E power supplies will still be utilized to power redundant containment isolation valves in series.

The modification for Unit 1 was completed during B1R04. The modification for Unit 2 is on schedule for B2R03.

Commitment satisfied:

Implementation of the modification, identified above, for each of the Unit 1 Hydrogen Monitoring Trains during B1R04.

Date by which the commitment was satisfied:

November 6, 1991