Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

March 1, 1991

Mr. James Lieberman, Director
Office of Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Braidwood Station Unit 1
Order Imposing Civil Penalty
NRC Inspection Report No. 50-456/90023
NRC Docket No. 50-456

References: (a) October 23, 1990 E. G. Greenman Letter to C. Reed
(b) November 5, 1990 T. J. Kovach Letter to A. B. Davis
(c) December 3, 1990 H. J. Miller Letter to C. Reed
(d) January 30, 1991 A. B. Davis Letter to C. Reed

Dear Mr. Lieberman:

This letter provides Commonwealth Edison's (Edison) response to the Notice of Violation and Proposed Imposition of Civil Penalty as described in reference (d). Reference (a) documents the results of a NRC Augmented Inspection Team (AIT) review of events that led to a loss of reactor coolant and personnel contamination on October 4, 1990 at Braidwood Nuclear Power Station, Unit 1. Reference (b) provided Edison's response to the AIT report. Reference (c) provided the results of a special follow-up inspection conducted by Mr. S. G. DuPont, acting Senior Resident Inspector at Braidwood Station, which contained proposed violations of NRC requirements. An Enforcement Conference was held on December 11, 1990 to discuss the proposed violations, their cause, and Edison's corrective actions.

Edison acknowledges the violations as stated in the Notice of Violation and the enclosure to this letter provides Edison's response and corrective actions to prevent further violations. Pursuant to 10 CFR 2.205, Edison is providing payment of the Civil Penalty in the amount of $87,500.

W/check 0365344 $87,500

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Braidwood Station senior management recognized that the loss of reactor coolant and personnel contamination event that occurred on October 4, 1990 was a serious event that demanded immediate attention. At the direction of the Station Manager an event investigation team was assembled consisting of Edison personnel from Braidwood Station, the Office of PWR Operations, and Nuclear Quality Programs. The event was investigated, root cause analysis determination performed and corrective actions recommended to prevent recurrence. The results of this investigation were submitted in reference (b) and discussed during the Enforcement Conference.

Braidwood Station management understands the importance of ensuring that management expectations regarding control of plant evolutions are appropriately implemented, particularly those that are infrequent or unusual. Edison agrees that had senior station management ensured that their expectations for implementation of the corrective actions for the March event been met, this event may not have occurred. As discussed in the Enforcement Conference, Braidwood Station believes that the program to review operational performance through periodic audits, crew evaluations and performance feedback will provide a mechanism for conveying station management's expectations.

More generally, Braidwood Station senior management understands and accepts its responsibilities to exercise strong management control and oversight of safety related activities. To implement these responsibilities, senior station management has actively pursued its central role in the development of a strong safety culture and has placed special emphasis on communicating its expectations to all levels of station personnel. In addition, several feedback mechanisms have been enhanced to ensure that senior management's expectations are being met.

The communications of expectations is actively pursued at all levels. The Station Manager routinely meets with various station groups. Each of these meetings presents an opportunity for him to convey his expectations to the station staff, to receive feedback from that staff and to clarify their understanding. These meetings include: (1) daily morning meetings with station superintendents and assistant superintendents, (2) plan of the day meetings with key station staff including assistant superintendents and department heads, (3) bi-weekly meetings with department heads, (4) monthly corporate overview meetings including union representatives from each department and (5) Periodic Plant Information Meetings to present the state of the station to all station personnel. In addition to these regular communication activities, an unusual or significant event causes station management to direct the issuance of General Information Notices which are given widespread station distribution.

To ensure that his expectations are being met, the Station Manager has directed management personnel from departments heads on up to spend a portion of their time away from administrative functions to monitor station activities. The results of this direct monitoring are reported to the Station Manager on a special form for that purpose. This enables the Station Manager to routinely verify that appropriate management personnel are observing plant activities.

Senior Station Management also regularly communicates its expectations to station personnel. Each week, either the Station Manager or one of his direct reports, meets with an operating crew during its requalification training to review operating concerns and the crew's understanding of management's expectations. The Production Superintendent and Technical Superintendent routinely meet with their direct reports to discuss their expectations and review current concerns. The Production Superintendent also chairs the daily plan of the day meeting. These meetings give senior station management another opportunity to emphasize the importance of conducting all station activities in compliance with station procedure and policies.

These meetings illustrate the importance that Braidwood Station's senior management places on conveying its expectations to station personnel, evaluating implementation of those expectations and taking corrective actions when they are not. To enhance its ability to convey these expectations, senior management attends appropriate training programs presented by industry representatives. The utility of additional training is being investigated.

In addition to these ongoing, broad, senior management actions, Braidwood has taken corrective actions which address the programmatic deficiencies which the NRC identified as contributing to this event. Those actions were described at the Enforcement Conference and were recognized by the NRC in reference (d). These corrective actions enhanced selected programs to raise the level of understanding of existing program requirements and to improve the quality of operating crew performance. These enhancements include a program consisting of review and discussion sessions of existing program requirements, existing program implementation audits, crew performance evaluations and performance feedback.

In addition, various procedures were clarified and senior management met with each shift crew to emphasize its responsibilities and authorities. Additional guidance has been provided to the Technical Staff on overtime and the conduct of surveillances. Finally, the control room organization has been augmented by adding a Special Activity Shift Supervisor (SASS). The SASS has been assigned to assist the Station Control Room Engineer in supervising surveillance activities, especially complex or unusual evolutions.

Braidwood believes that the SASS will provide an important element in the long-term management overview of plant activities. Other elements at higher levels have been described above. Together, these actions provide reasonable assurance of effective management overview of plant activities, consistent with our expectations

The augmentation of the control room staff has just been reviewed and evaluated by the independent Onsite Nuclear Safety Group as part of an independent assessment of control room practices. Senior station management will utilize such assessments to enhance control room practices.

With regard to the other contributors to this event, Edison acknowledges the NRC's concerns about excessive working hours for personnel performing safety related work. We are committed to maintaining a safe and productive work environment. A corporate interim policy statement on overtime was issued on December 31, 1990 that specifies actions to be taken at each station to administratively control overtime to ensure safety is not compromised.

Edison realizes the importance of transferring information between it's nuclear stations in a timely manner for the purpose of avoiding similar occurrences. A potentially significant event report for this event was distributed to all Edison nuclear stations on October 10, 1990. In early 1991, a Corporate Lessons Learned Program was initiated to review, analyze, and disseminate information. This program was described to NRC Region III personnel during a meeting held between Edison and Region III personnel on February 21, 1991. This event and its corrective actions will be reviewed through the Lessons Learned Program and appropriate guidance will be provided to all Edison nuclear stations.

If you have any questions on this matter, please direct them to Mr. Allen Checca, 708-515-7279.

Very truly yours,

T.J. Kovach
Nuclear Licensing Manager

Enclosure
cc: NRC Resident Inspector - Braidwood
A. Bert Davis - NRC Region III

800:4

ENCLOSURE

COMMONWEALTH EDISON COMPANY

REPLY TO NOTICE OF VIOLATION

NRC INSPECTION REPORT

50-456/90023

VIOLATIONS ASSESSED A CIVIL PENALTY: (456/9002301)

Technical Specification 6.8.1.a requires that written procedures be established, implemented, and maintained for activities listed in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Listed activities include administrative procedures and surveillance testing.

1. Surveillance Procedure BwVS 4.6.2.2-1, Steps 2.21 through 2.24, requires, in part, the closure of Residual Heat Removal Hot Leg Suction Valve (RH028B), and removal of the hose from the vent connection on RH028B, prior to restoring the Residual Heat Removal system to the original as found condition.

   Contrary to the above, on October 4, 1990, the Technical Staff Engineer directing the performance of surveillance procedure BwVS 4.6.2.2-1, failed to follow steps 2.21 through 2.24 by not closing vent valve RH028B before opening isolation valve RH8702B, a step in restoring the Residual Heat Removal system to it's original as found condition.

2. Braidwood Administrative Procedure BwAP 335-1, Operating Shift Turnover and relief, sections C.3.d (Shift Engineer), C.4.d (Station Control Room Engineer - SCRE), and C.5.e (Shift Supervisor), requires, in part, that the off-going Shift Engineer, SCRE and Shift Supervisor document on the turnover sheet surveillances in progress at turnover.

   Contrary to the above, on October 3, 1990, the off-going Shift Engineer, SCRE, and Shift Supervisor failed to document on their respective turnover sheets that surveillance BwVS 0.5-2.RH.2-1 was then in progress on Unit 1 Residual Heat Removal System.

3. Braidwood Administrative Procedure BwAP 300-1, Conduct of Operations, Section C.3.n.(3), requires, in part, that the individual who is to perform the activity is responsible to adequately review the procedure, to fully understand what he (she) is doing, and to be cognizant of all the limitations, precautions, and requirements.

Contrary to the above, on October 4, 1990, the extra Nuclear Station operator assigned to perform the residual heat removal system surveillance activities failed to adequately review surveillance procedure BwVS 4.6.2.2-1, to fully understand the activities and was not cognizant of all limitations, precautions, and requirements when opening isolation valve RH8702B prior to closing vent valve RH028B.

4. Braidwood Administrative Procedure BwAP 300-1, Conduct of Operations, Section C.3.n.(2), requires, in part, that briefings shall be conducted by the Shift Engineer or designee for individuals involved in an evolution that is to be performed.

   Contrary to the above, on October 3, 1990, the Shift 1 Shift Engineer or designee failed to conduct an adequate briefing with the individuals assigned to perform the residual heat removal system surveillance test.

5. Braidwood Administrative Procedure BwAP 390-1, Operating Department Surveillance Program, Section E.3, requires, in part, that when the Station Control Room Engineer (SCRE) assigns a surveillance to the appropriate Nuclear Station Operator (NSO), the SCRE shall inform the NSO of any effects on total plant operations, limiting conditions, or any other significant information concerning the performance of a surveillance.

   Contrary to the above, on October 3, 1990, the Station Control Room Engineer failed to inform the appropriate NSO assigned to perform the surveillances of effects on plant operation. limiting conditions or any other significant information concerning the performance of surveillances BwVS 4.6.2.2-1 and BwVS 0.5-2.RH.2-1 on Unit 1 Residual Heat Removal system.

6. Braidwood Administrative Procedure BwAP 390-1, Operating Department Surveillance Program, Section E.5, requires, in part, the Station Control Room Engineer record in the comments section of the applicable surveillance data package cover sheet the reason for non-scheduled or extra surveillances being performed if the surveillance is not listed on the current schedule.

   Contrary to the above, on October 3, 1990, the Shift 3 Station Control Room Engineer failed to record on the data package cover sheet the reason for performing surveillance BwVS 0.5-2.RH.2-1, a non-scheduled or extra surveillance that was not listed on the current schedule.

7. Braidwood Administrative Procedure BwAP 390-1, Operating Department Surveillance Program, Section E.4, requires, in part, that the Unit Nuclear Station Operator shall ensure that the surveillance is performed in accordance with the applicable station procedures.

   Contrary to the above, on October 4, 1990, the Unit 1 Nuclear Station Operator failed to ensure that activities associated with Residual Heat Removal System Surveillances, BwVS 4.6.2.2-1 and BwVS 0.5-2.RH.2-1, were conducted in accordance with the surveillance procedures in that isolation valve RH8702B was opened prior to closing vent valve RH028B.

RESPONSE:

Commonwealth Edison Company (Edison) acknowledges the violations stated above. The direct cause of the violations was the failure of the control room operations staff and technical staff engineers to adhere to various administrative and surveillance procedures during the performance of multiple Residual Heat Removal System tests on October 4, 1990. This led to the inadvertent opening of the 1RH8702B valve causing reactor coolant water to spray from an opened vent being used to conduct leak rate testing. As a result of this spray, three people were slightly contaminated.

Edison recognizes that the underlying root causes of this event involved broader issues. These have been addressed separately in the cover letter. Edison's review of this event showed that its consequences had very minor adverse impacts on the health and safety of plant workers and no impact on the public. Nevertheless, Edison does recognize the potential impacts of the underlying root causes and has taken appropriately broad corrective actions.

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED:

The flowpath was isolated by taking the 1RH8702B valve to the closed position. The components and the general area where the water from the vent line sprayed were inspected by an engineer from the Inservice Inspection Group. Based on the results of this inspection, it has been concluded that the effects of the water spray were negligible.

The three individuals and the area sprayed by the reactor coolant water were successfully decontaminated.

CORRECTIVE ACTIONS TO AVOID FURTHER VIOLATION:

The following corrective actions were taken in direct response to the event. The broader, follow-up and ongoing corrective actions which address the underlying root causes are described in the cover letter.

The Assistant Superintendent of Operations (ASO) met with operating shift supervision to review the concerns relating to this event including communications, turnovers, awareness of planned surveillances and the importance of following procedures.

The ASO also met with all six operating crews to discuss this event along with an overview of management expectations on the appropriate level of awareness.

The individuals involved in the event were counseled on responsibilities with respect to overall unit control, direction, and supervision.

A description of this event along with program enhancements associated with this event has been incorporated into the licensed operator requalification training during the first quarter of 1991.

The Braidwood Station Technical Staff has reviewed this event during a tailgate training session.

The Station Manager conducted a plant information exchange meeting with plant personnel during which he emphasized that the expectation of station management is that everybody will follow procedures.

DATE OF FULL COMPLIANCE:

The licensed operator requalification training is expected to be completed by March 29, 1991.

VIOLATION: (456/9002302)

Technical Specification 6.2.2.e requires, in part, that administrative procedures be developed and implemented to limit the working hours of unit staff who perform safety-related function; e.g., Licensed Senior Operator, Licensed Operator, Health Physics personnel, Equipment Operators, and key Maintenance personnel.

Contrary to the above, as of October 4, 1990, the licensee failed to develop adequate administrative procedures to limit the working hours of unit staff who perform safety-related functions. Specifically, BwAP 100-7, Revision 2, Overtime Guidance for Personnel that Perform Safety-Related Functions, the administrative procedure implementing Technical Specification 6.2.2.e was deficient in that it did not address all unit staff groups responsible for performing safety-related functions such as Technical Staff Engineers who direct the performance of surveillance testing.

RESPONSE:

Edison acknowledges that inadequate administrative procedures were in place to limit the working hours of unit staff who perform safety-related functions. Specifically, BwAP 100-7, "Overtime Guidelines for Station Personnel," Revision 2, the administrative procedure implementing Technical Specification 6.2.2.e, failed to address all unit staff groups responsible for performing safety-related functions such as Technical Staff Engineers who direct the performance of surveillance testing.

Edison's review of this event determined that there had been no adverse impact on the health and safety of the public.

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED:

Technical Staff Memo Number 116 was issued on October 4, 1990. This Memo provides overtime guidelines for Technical Staff Personnel by applying the overtime guidelines presented in BwAP 100-7, "Overtime Guidelines for Station Personnel," to the personnel in the Technical Staff. Additionally, the Station Manager directed that the corporate overtime policy be extended to all station personnel pending a review of overtime practices at the station.

CORRECTIVE ACTIONS TO AVOID FURTHER VIOLATION:

In order to ensure that overtime at Braidwood Station is properly controlled, Braidwood Station Procedure, BwAP 100-7, "Overtime Guideline for Station Personnel," has been revised to include overtime guidance for all Commonwealth Edison personnel working at Braidwood Station. This revision will provide adequate administrative control to limit the working hours of unit staff who perform safety-related functions.

DATE OF FULL COMPLIANCE:

Full compliance has been achieved.