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June 9, 1997

U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001  
Attention: Document Control Desk

Subject: Reply to Notice of Violation  
NRC Inspection Report 50-456(457)/97005  
Braidwood Station Unit 1 and Unit 2  
NRC Docket Numbers 50-456 and 50-457

Reference: J. L. Caldwell letter to H. G. Stanley dated May 9, 1997, transmitting  
Notice of Violation from Inspection Report 50-456(457)/97005

The Reference letter contains an Inspection Report documenting observations made during a six week period which ended on April 7, 1997. A Notice of Violation (NOV), which includes four Severity Level IV violations, was transmitted as part of the Inspection Report. ComEd's response to these violations is included in the attachment to this letter.

As mentioned in the cover letter to the Inspection Report, a good safety focus was demonstrated during the inspection period. Braidwood Station has focused efforts in this area and recently completed a refueling outage in a safe, conservative manner. We are pleased with this performance and will continue to communicate our expectations to station workers regarding our safety culture commitment.

The following commitments were made in the attached response:

- Braidwood will address the disposition of the PD pump in August, 1997. Once complete, procedure revisions will be evaluated.
- A systematic review of floor plugs will be completed and revisions will be done to appropriate drawings and documents as required.
- Braidwood will revise the applicable surveillance procedures used for response time testing for the Emergency Core Cooling Systems (ECCS).
- The Plant Barrier Impairment (PBI) procedure will be revised to reflect the requirement of performing a Safety Evaluation or Screening for changes to ventilation system access doors and internal doors, floor plugs, and other ventilation boundaries, where these changes alter the system as described in the UFSAR.

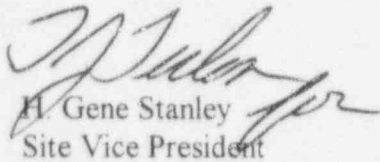
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If your staff has any questions or comments concerning this letter, please refer them to Terrence Simpkin, Braidwood Regulatory Assurance Supervisor, at (815) 458-2801, extension 2980.

Sincerely,



H. Gene Stanley  
Site Vice President  
Braidwood Nuclear Generating Station

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cc: A. B. Beach, Regional Administrator - Region III, NRC  
C. J. Phillips, Senior Resident Inspector - Braidwood Station  
G. F. Dick, Jr., Project Manager, NRR  
F. Niziolek, Division of Engineering - Office of Nuclear Safety - IDNS

ATTACHMENT 1

REPLY TO NOTICE OF VIOLATION  
VIOLATION (50-456(457)/97005-01)

1. Technical Specification 6.8.1.a states that written procedures shall be established, implemented, and maintained covering the activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Appendix A, of Regulatory Guide 1.33, Revision 2, February 1978, requires procedures for events that require emergency boration.

Contrary to the above, on March 25, 1997, the inspectors observed that 1BwFR-S.1, "Response to Nuclear Power Generation/ATWS Unit 1", Revision 1A, Step 4a, had not been maintained in that it directed operators to start the chemical and volume control system positive displacement charging pump if neither of the centrifugal charging pumps could be started. The positive displacement charging pump has been out-of-service and has not been run for about 10 years.

REASON FOR THE VIOLATION

During an earlier revision to the Abnormal Operating Procedures (OAs), discussions were held to determine whether references to the Positive Displacement (PD) pump should remain in the OAs and Emergency Operating Procedures (EOPs) considering the PD pump had been out of service for a number of years. At the time, it was determined that the preferred course of action was to leave the reference of the PD pump in the OAs / EOPs as the Station intended to repair the pump and return it to service. As a result, the PD pump reference was left in the procedure being revised as well as the other applicable OAs / EOPs.

CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

The Emergency Operating Procedure in question was evaluated by Station personnel. It was determined that the procedure could be performed as written based on current usage rules and operator training programs.

ACTIONS TAKEN TO PREVENT RECURRENCE

Braidwood will address the disposition of the PD pump in August, 1997. Once complete, procedure revisions will be evaluated.

Longstanding out of services were reviewed for their effect on EOPs. No additional issues were identified.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance will be achieved once the PD pump status is dispositioned in August, 1997, and the applicable procedures are evaluated to determine if revisions are necessary.

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### REPLY TO NOTICE OF VIOLATION VIOLATION (50-456(457)/97005-02)

2. 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," states, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected.

Contrary to the above, the inspectors identified a plant barrier between Fire Zones 11.3-0 and 11.4-0 at Auxiliary Building elevation 383, column N-18, that had been degraded since June 6, 1996. This barrier was needed to satisfy requirements stated in Deviation A.4 of the Fire Protection Report.

### REASON FOR THE VIOLATION

On June 6, 1996, a Plant Barrier Impairment (PBI) was requested for the removal of the 364', 383', and 401' N-18 Auxiliary Building equipment floor plugs. The plugs had been removed to facilitate equipment movements in support of other maintenance activity. An extension to the duration of the PBI to allow the floor plugs to remain open for the Unit 1 mid-cycle outage (A1P02) was requested and approved.

The Station's Fire Protection Report includes a requirement to have fire resistant caulking for these particular floor plugs. However, the floor plugs were not recognized as fire barriers nor were the barriers documented as such on the corresponding design drawings. Maintenance Memo 200-18, "Floor Plug Removal," documented these barriers as "No Requirements", which diminished the sense of importance in completing the reinstallation of the barriers.

The floor plugs were set in place on all three elevations on January 21, 1997. The floor plugs on the 364' and 401' elevations were properly caulked and the corresponding PBIs were closed out. However, the caulking of the 383' floor plug could not be completed because the supply of caulking material was depleted. As a result, the PBI for the 383' floor plug remained open to track the completion. Additional caulking had been ordered to complete the caulking job.

The PBI was being used as the tracking method. This process was not sufficient to drive the work to completion.

### CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

An Action Request (AR) was generated to complete the floor plug installation. This activity was completed on April 18, 1997.

### ACTIONS TAKEN TO PREVENT RECURRENCE

Maintenance Memo 200-18, "Floor Plug Removal", has been revised to indicate the requirement to install fire resistant caulking as committed in the Fire Protection Report.

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The reinstallation of floor plugs will be controlled by ARs which will be converted to minimal work requests. The Maintenance Memo referenced above includes a step requiring an AR to be generated for reinstallation of floor plugs if one does not exist. This requirement has been communicated to the Work Analysts and Maintenance First Line Supervisors.

A systematic review of floor plugs is being performed. Appropriate document and drawing revisions will be made to ensure that the function of the floor plug seal (i.e. fire protection, flood, etc.) is clearly stated and the applicable seal detail satisfies the design function.

DATE WHEN FULL COMPLIANCE WAS ACHIEVED

Full compliance was achieved when the 383' floor plug was caulked as required.

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3. 10 CFR Part 50, Appendix B, Criterion XI, states in part, that a test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures.

Contrary to the above, the inspectors found that testing to measure Chemical Volume (CV) pump and Residual Heat Removal (RH) pump response times was preconditioned by the operation of the system immediately prior to response time measurement on the system. Additionally, no surveillance test existed that tested the startup of the CV pump as it would under accident conditions. All existing surveillances required first manually starting the charging pump auxiliary lube oil pump.

#### REASON FOR THE VIOLATION

The current test method for determining the response time of the Chemical Volume (CV) pump (as obtained in BwVS 0.5-2.SI.2-3) sets flow conditions to match the assumed accident conditions, which is expected to be between 520 and 550 gpm. Response time is taken after simulated seal injection flow is set to 80 gpm through the charging header. The remainder of the 520 to 550 gpm flow is directed through the cold leg injection lines. The CV pump is operated prior to taking the response time to establish the 80 gpm simulated seal injection flow by throttling the charging header flow.

For the Residual Heat Removal (RH) pump, the response time is obtained in BwVS 0.5-2.RH.2-2 at a time during a refueling outage where the RH system will not cause any reactivity excursions. In order to set flow conditions to match the assumed accident conditions, the procedure currently starts the pump recirculating back to the RWST and ramps flow up to establish flow at about 4500 gpm. The flow is throttled up in a controlled manner to ensure that the response time is taken under flow conditions that mimic the assumed accident analysis requirement of 3804 gpm. The flow is throttled to the desired condition in order not to exceed the design capability of the pump which could occur with the system line up during the test. Once the requisite flow is established, the pump is shut off. It is subsequently restarted to obtain the response time.

Braidwood Station agrees that exercising the CV and RH systems prior to obtaining response times may have inadvertently preconditioned the equipment.

Regarding the concern associated with manually starting the auxiliary lube oil pump prior to starting the CV pump, it has been a practice at Braidwood Station to first start the auxiliary lube oil pump based on the vendor's recommendation. This is done in order to prevent any long term degradation of the CV pump bearings from the multiple starts without the support of the auxiliary lube oil pump. It should also be noted that during the Emergency Diesel Generator Sequencing test, the CV pump does obtain a start signal without the auxiliary lube oil pump already running. The Station believes the action of starting the auxiliary oil pump is technically justified and does not constitute unnecessary preconditioning. Reasons for this include:

1. IN 97-16, "Preconditioning of Plant Structures, Systems, and Components before ASME Code Inservice or Technical Specification Surveillance Testing," states that

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"in certain cases, the benefit of some preconditioning activities outweighs the benefits of testing in the as-found condition. For example, the staff has approved the practice of routine checking of Emergency Diesel Generator cylinders for water accumulation before performing surveillance tests in order to prevent damage caused by hydrolocking." Westinghouse and the CV pump manufacturer recommend that the auxiliary lube oil pump should be started prior to start-up of the CV pump for all normal operations, including special tests. This action will prevent premature failure of the pump bearings due to multiple pump starts without oil flow to the bearings. Therefore, Braidwood's practice of starting the auxiliary lube oil pump prior to running a CV pump is consistent with the guidance of IN 97-16 regarding the benefit of some preconditioning activities.

2. Testing was performed measuring the start times with and without the auxiliary lube oil pump. A review of the test data demonstrated that there was no significant (.1 second) difference between the response times obtained with the auxiliary lube oil pump running (hot start) and without the auxiliary lube oil pump running (cold start).

### CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

Braidwood Engineering reviewed the CV and RH response time surveillances to assess the methodology. As part of the evaluation, they reviewed the technical requirements for obtaining response time testing and the concerns with preconditioning of equipment. Also, additional data was obtained during the performance of the response time surveillances for CV, RH, and SI pumps. This data was used to compare and evaluate the effects that different system conditions have on response time results. The evaluation demonstrated that response times obtained under the different test conditions show that the Emergency Core Cooling Systems (ECCS) would have been capable of delivering the flow to the core during a design basis accident within the time frame specified in the accident analysis. There was no significant (.1 second) difference between the response times obtained under hot start conditions (with the pump recently operated and the auxiliary lube oil pump running) and cold start conditions (with the pump not recently operated and without the auxiliary lube oil pump running).

### ACTIONS TAKEN TO PREVENT RECURRENCE

Braidwood will revise the surveillance procedures used for response time testing for the CV and RH systems. The revisions will permit the collection of pump start response times under flow conditions that approximate post-accident conditions but without operating the pump to establish test flow conditions. Since the test flow conditions will not be established with the assistance of actual pump operation, a conservative system alignment will be made to ensure the test flows are above the minimum flow requirements for pump protection and below the pump runout limitations. Braidwood Station believes that any

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difference in the measured response times between flow conditions established per the existing and revised procedures would be insignificant.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance will be achieved when the appropriate surveillance procedures are revised. The necessary revisions will be completed prior to the next execution of the procedures.



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4. 10 CFR 50.59, paragraph (b)(1), states, in part, that the licensee shall maintain records of changes in the facility and ... these records must include a written safety evaluation which provides the bases for the determination that the change... does not involve an unreviewed safety question.

Contrary to the above, on February 25, 1997, the inspectors observed that the licensee had blocked open a doorway between the auxiliary building ventilation exhaust plenum and the auxiliary building which placed the auxiliary building ventilation system in an abnormal lineup and had not performed a 10 CFR 50.59 safety evaluation.

REASON FOR THE VIOLATION

The procedure controlling the work in the auxiliary building plenum area did not require a 50.59 to be performed when the plenum door was blocked open.

CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

Engineering completed a 50.59 Safety Evaluation for the open plenum access door. In addition, they immediately began requiring Safety Evaluations for PBI permits that changed ventilation system boundaries as described in the UFSAR.

ACTIONS TAKEN TO PREVENT RECURRENCE

The PBI procedure will be revised to reflect the new requirements of performing a Safety Evaluation or Screening for changes to ventilation system access doors and internal doors, floor plugs, and other ventilation boundaries where these changes alter the system as described in the UFSAR.

DATE WHEN FULL COMPLIANCE WAS ACHIEVED

Full compliance was achieved when the 50.59 Safety Evaluation was successfully completed.