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1400 Opus Place
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April 22, 1991

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

Subject: Braidwood Station Unit 2
Supplemental Response to NRC Bulletin 88-08
Supplements 1 & 2
TAC No. M69603
NRC Docket Nos. 50-454/455

- References: (a) NRC Bulletin 88-08, dated June 22, 1988.
(b) NRC Bulletin 88-08, Supplement 1, dated June 24, 1988.
(c) NRC Bulletin 88-08, Supplement 2, dated August 4, 1988.
(d) W. Morgan (CECo) letter to U.S. NRC, dated October 3, 1988.
(e) D. Taylor (CECo) letter to U.S. NRC, dated August 7, 1990.

Dear Sir:

References (a), (b), and (c) requested that licensees (1) review the reactor coolant system (RCS) to identify any connected, unisolable piping that could be subjected to temperature distributions which could result in unacceptable thermal stresses and (2) take action, where such piping is identified, to ensure that the piping will not be subjected to unacceptable thermal stresses. Reference (d) provided Commonwealth Edison Company's (CECo) initial response to References (a), (b), and (c) for Braidwood Station. As reported in Reference (d), a review of the piping systems connected to the RCS for each Braidwood unit identified sections of piping in the Auxiliary Spray line (1/2RY18A) and the four (4) Charging Pump to Cold Leg Injection lines (1/2RC30AA, 1/2RC30AB, 1/2RC30AC, 1/2RC30AD) which would be susceptible to thermal stresses from temperature stratification or temperature oscillations in the event of isolation valve leakage. Reference (e) provided reports on the actions that were performed, and programs that had been implemented, to provide continuing assurance that piping integrity for both units will be maintained. Additionally, Reference (e) provided the results of non-destructive examinations performed on the Auxiliary Spray line for Braidwood Unit 1 during its Fall 1989 refueling outage.

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Reference (e) indicated an evaluation was performed for the Auxiliary Spray line and Main Spray line to determine the effects of potential thermal stratification and cycling. For this evaluation, which applies to both units, a conservative thermal transient (which considered thermal stratification and cycling) due to Auxiliary Spray line isolation valve leakage was postulated, based on the event described at Farley Station in Reference (a). For this postulated transient, a stress analysis and fatigue analysis (which used fatigue crack growth methods) was performed to determine an acceptable period of power operation.

The results of the evaluation indicated that it would take a minimum of forty (40) months of power operation for a crack to propagate to an unacceptable size. Therefore, if non-destructive examinations of the inspection locations (identified by the evaluation) are performed during a refueling outage and no cracks are identified, the structural integrity of the Auxiliary Spray and Main Spray lines would be maintained for at least two (2) fuel cycles, and no temperature monitoring would be required.

The evaluation provided the inspection locations for the Auxiliary Spray and Main Spray lines (in the vicinity of the branch connection). These locations were inspected during the first Unit 2 refueling outage. No indications were found. Additionally, the Inservice Inspection (ISI) program has been revised to include the inspection of these locations at a frequency of every other refueling outage. The evaluation performed, coupled with the commitment to a long-term inspection program, provides the continued assurance of Auxiliary Spray line and Main Spray line integrity and fulfills Bulletin Action 3.

In response to Actions 2 and 3 of Reference (a) for the Charging Pump to Cold Leg Injection lines (1/2RC30AA, 1/2RC30AB, 1/2RC30AC, 1/2RC30AD), Reference (d) reported that there was assurance that the isolation valves (1/2SI8801A and 1/2SI8801B) for these lines had not leaked based on the results of previous surveillance testing (RCS back leakage tests) for the Cold Leg Injection Check Valves 1/2SI8815. Since there was no indication that the Charging Pump to Cold Leg Injection lines had not been subjected to excessive thermal stresses, these lines were not scheduled to be examined (non-destructive examinations). In order to assure that these lines would not be subjected to long-term thermal cycling, surveillance procedures were revised to ensure that leakage testing is specifically performed on the isolation valves (1/2SI8801A and 1/2SI8801B) for the Charging Pump to Cold Leg Injection lines.

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Surveillance testing performed during the refueling outage revealed no leakage, thus, providing assurance that the Charging Pump to Cold leg Injection lines would not be subjected to excessive thermal stresses.

This letter completes the reporting requirements and provides notification of completion of the action items identified in Bulletin 88-08 Supplements 1 and 2 for Braidwood Station Unit 2.

Please direct any questions that you may have concerning this response to this office.

Respectfully,



D. L. Taylor
Generic Issues Administrator

cc: A.B. Davis - Regional Administrator, Region III
Senior Resident Inspector - Braidwood Station
R. Pulsifer - NRR Project Manager

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