

June 3, 1997

U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

ComEd

Attention: Document Control Desk

Subject: Braidwood Nuclear Power Station Unit 1
NRC Docket Numbers: 50-456

Additional Information Regarding 3 Volt Interim Plugging Criteria
Technical Specification Amendment Renewal Request

- Reference:
1. M. D. Lynch letter to I. Johnson dated May 14, 1997, transmitting Safety Evaluation for the Renewal of 3 Volt Interim Plugging Criteria
 2. Teleconference dated May 19, 1997, between the Commonwealth Edison Company and the Nuclear Regulatory Commission

The Referenced letter transmitted the Nuclear Regulatory Commission (NRC) Safety Evaluation (SE) for the renewal of 3 volt interim plugging criteria for Braidwood Unit 1. In that SE the Staff stated an Advisory Committed Reactor Safeguards (ACRS) member's concern that the effect of a two-dimensional flow distribution above the topmost tube support plate would give rise to a radial variation in the hydrodynamic pressure loading on the topmost tube support plate. As discussed in the Referenced teleconference, the Staff requested ComEd's calculation which was performed to address this issue. Attached is, "A Determination of the 2-Dimensional Pressure Distribution on the Byron/Braidwood D4 SG Tube Support Plate During a MSLB." Also attached is a clarification of the reference information for this calculation.

If you have any questions concerning this correspondence, please contact Denise Saccorando, Senior PWR Licensing Administrator, (630) 663-7283.

Sincerely,

John B. Hosmer

for

John B. Hosmer
Engineering Vice President

A001/1

Attachment

cc: D. Lynch, Senior Project Manager - NRR
G. Dick, Byron/Braidwood Project Manager - NRR
S. Burgess, Senior Resident Inspector - Byron
A.B. Beach, Regional Administrator - RIII
Office of Nuclear Safety - IDNS

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Clarification of Reference Information for PSA-B-97-05

Reference:

- 1) "Calculation of Byron1/Braidwood 1 D4 Steam Generator Tube Support Plate Loads with RELAP5M3" ComEd Document number PSA-B-95-17, Revision 0, (October 11, 1995) ***Copy of document is attached.***
- 2) "An Independent Verification of Byron/Braidwood D4 SG Tube Support Plate Differential Pressures During MSLB", ComEd Report PSA-B-95-15, Revision 0, (September 1, 1995) ***Copy of document is attached.***
- 3), 5) "Nuclear Systems I", Todreas and Kazimi. (1990) ***Two sections of this reference are pertinent to this effort. 1) the integral Bernoulli eqn of motion development on pages 351-358, and 2) the Zukauskas correlation description provided on page 390-391, covering flow resistance across bare rod arrays.***
- 4) "Introduction to Unsteady Thermofluid Mechanics", F. J. Moody (1990) ***This reference is used to discuss the isentropic expansion of the fluid page 91, and the acoustic propagation rates in steam water mixtures page 72.***
- 6) "The Thermal Hydraulics of a Boiling Water Nuclear Reactor", R. T. Lahey and F. J. Moody, (1977). ***This reference was used to provide an estimate of vessel depressurization rate independent of other computer codes. Key page is included in Reference 2 above (page 373). A more restrictive depressurization rate was applied in this analysis.***
- 7) "Braidwood Unit 1 Technical Support for Cycle 5 Steam Generator Interim Plugging Criteria", WCAP-140146. (May, 1994) ***This reference is the primary source of geometric information. The key geometry information is shown in Figure 2.***
- 8) "Technical Support for Alternate Plugging Criteria with Tube Expansion at TSP Intersections for Braidwood 1 and Byron 1 Model D4 Steam Generators", WCAP-14273, (1995). ***This document contains/references some of the TRANFLO calculation results that are referred to with respect to depressurization rate.***