Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

May 4, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Byron Station Units 1 and 2
Braidwood Station Units 1 and 2
Additional Information Concerning
Crushable Material
NRC Docket Nos. 50-454/455 and 50-456/457

Reference (a): B. J. Youngblood letter to D. L. Farrar
dated March 30, 1983

Dear Mr. Denton:

Reference (a) requested that the Commonwealth Edison Company provide certain additional information concerning crushable pipe whip restraint material for our Byron and Braidwood Stations.

The Attachment to this letter provides our response to Question 110.73. Our FSAR will be amended to include the information contained in the Attachment to this letter as appropriate.

Please address any questions that you or your staff may have concerning this matter to this office.

One (1) signed original and fifteen (15) copies of this letter with Attachment are provided for your use.

Very truly yours,

E. Douglas Swartz
Nuclear Licensing Administrator

Attachment

cc: J. G. Keppler - RIII
RIII Inspector - Braidwood
RIII Inspector - Byron

B001

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QUESTION 110.73

"The staff has recently become aware of specific design details of pipe whip restraints used at the Byron facility. The design details indicate that energy absorbing material is used in pipe whip restraint design to mitigate the consequences of a postulated whipping pipe. It has become apparent to the staff that the pipe whip restraint design is based on the ability of the energy absorbing material to accommodate lateral loadings for which the material might not have been adequately designed nor tested. Thus, the ability of the pipe whip restraint to perform its intended function might not be assured.

"Provide the analytical basis and/or experimental test results which shows with justifiable conservatism that the energy absorbing material used in pipe whip restraints is capable of performing its intended function when subjected to lateral loadings."

RESPONSE

Pipe whip restraints on the Byron/Braidwood projects utilize a tension-compression system in which the legs of the restraints function as elements in a truss. The energy absorbing material is utilized only in taking compression loads in the restraint leg which is in compression under a given loading condition. The energy absorbing material (EAM) is not assumed to take any lateral load in the analysis of the restraints.

During compression of the EAM in certain configurations, however, an angularity of load results. The effects of this angularity are considered to be minor. However, a confirmation test program has been planned to verify that this effect is minor. This testing is scheduled to be completed by August 1, 1983, and a test report will be completed by August 15, 1983.