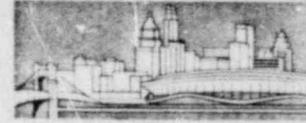


THE CINCINNATI GAS & ELECTRIC COMPANY



CINCINNATI, OHIO 45201

Docket No. 50-358

October 31, 1980

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: WM. H. ZIMMER NUCLEAR POWER STATION -
UNIT 1 - BWR JET PUMP HOLDDOWN BEAMS

Dear Mr. Schwencer:

In your letter of June 6, 1980 to Mr. E. A. Borgmann, you requested that CG&E respond with respect to the item identified by I&E Bulletin 80-07 concerning observations at the Dresden Nuclear Power Plant. The attachment to this letter constitutes our response to your request for information.

Very truly yours,

THE CINCINNATI GAS & ELECTRIC COMPANY

By *James D. Flynn*

JAMES D. FLYNN, Manager
Licensing and Environmental Affairs

JDF:dew

Enclosure

cc: Charles Bechhoefer
Glenn O. Bright
Frank F. Hooper
Troy B. Conner, Jr.
James P. Fenstermaker
Steven G. Smith
William J. Moran
J. Robert Newlin
William G. Porter, Jr.
Earl A. Borgmann
F. T. Daniels
W. Peter Heile
Leah S. Kosak
John D. Woliver
Mary Reder
David K. Martin
Robert A. Jones
Andrew B. Dennison

8011040/68

A

RESPONSE NRC POSITION
ON BWR JET PUMP HOLDDOWN BEAMS

Response to Question 1

Evaluations performed by General Electric (GE) has determined that beam failures have resulted from intergranular stress corrosion cracking. A comparison of the failed BWR 3 beam with the BWR 4-6 beam, as used on Zimmer, indicates that the Zimmer beam operates at a peak stress 14% lower than the BWR 3 beam at the present preload. Since time to failure is dependent on applied stress, the BWR 4-6 beams, as presently designed and installed, are predicted to have a longer life.

Response to Question 2

A reduction of the 30 kip preload currently specified for BWR 4-6 beams to 25 kip will yield a significant factor of improvement in predicted time to crack initiation. Using relationships developed from field experience and laboratory stress corrosion tests, minimum time to crack initiation of the Zimmer jet pump beam is estimated to increase by at least a factor of four with respect to the BWR 3 jet pump beam. Additional testing to be conducted through 1981 should make it possible to more accurately predict the expected life of beams with preload reduction. The operational acceptability of this reduced preload has been demonstrated by tests in the GE high flow test facility. Based on current test data, the preload reduction is expected to increase the beam operating time to crack initiation, at a 2.5% probability level, to a range of 19 to 40 years.

Based on information available to date, the preload reduction as described above is expected to be a long-term solution for BWR's 4-6 and would be adopted by Zimmer.

Response to Question 3

If a long-term solution is not agreed upon, periodic inspections of the Zimmer holddown beams would be conducted as a part of the ISI Program. The inspection frequency will be determined on the basis of results obtained from operating plants of the same design with surveillance programs currently in place. Crack propagation rates are slow enough to be readily detected during scheduled outages without fear of undetected cracks developing into breaks between outages. Surveillance via ultrasonic inspection can detect cracks in jet pump beams and would likely be employed on Zimmer.