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January 10, 1983

Mr. Paul O'Connor
Project Manager
Operating Reactors Branch No. 5
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Dresden 2
SEP Topic: III-5.A, High Energy Line
Break Inside Containment
NRC Docket 50-237

Reference: (1) T.J. Rausch letter to P. O'Connor
dated November 17, 1982.

Dear Mr. O'Connor:

In response to the NRC questions which were asked during telephone conversations on December 10 and 13th regarding the final report on Effects of Pipe Break on Systems, Structures and Components Inside Containment (Reference 1), the following responses are being provided:

Question #1

Clarify the statment on page 4-26

"Jet impingement evaluations were performed for all ratios of whipping pipe to target pipe diameters."

Response #1

The above sentence should be changed to the following:

"Jet impingement evaluations were performed for all ratios of broken pipe to target pipe diameters. No unacceptable interactions were identified."

Question #2

2.1 The shell analysis results as presented in TTL Final Report 1105 CECO-01 gives the maximum strain level in the target pipe as 25 percent to the minimum uniform ultimate strain of the material. Is the 25 percent number an upper bound on the maximum strain levels in the other target pipe?

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Question #2 (Cont'd)

- 2.2 The shell analysis results indicate that the flow area of the target pipe was decreased by approximately 8.7 percent. Is the 8.7 percent reduction in the flow area an upper bound on the flow area reduction in the target pipes?
- 2.3 What is the affect of flow area reduction of the functionability of the target pipe? Does the deformation of the target pipe affect the system's capability to deliver the required fluid flow?

Response #2

For target pipes which must maintain system functionability it is concluded that:

- 2.1 Twenty-five percent of uniform strain is an upper bound on the maximum strain level in the pipe.
- 2.2 The upper bound value on flow area reduction is 20 percent.
- 2.3 The increase in system head loss as a result of a postulated constriction equal to a 20 percent reduction in flow area is negligible and therefore, the effect on system flow is negligible.

Question #3

Provide additional information for the postulated pipe break 02-3001-01G (discussed on page 7-1) which involved 3 interactions

- whip on electrical
- jet on electrical
- jet on electrical

Response #3

The NRC staff is interested in the postulated break of a 20 inch main steam line and its interaction with 3 electrical cables (shown below) as targets which are used for temperature indications of the reactor vessel in the control room. There are redundant indications of vessel shell (steam), vessel below normal water level, flange and support skirt temperatures that read out in the control room. These temperature indications are not safety related but are recorded only during heatups and cooldowns as a surveillance requirement, as stated in Technical Specification 4.6.A. Refer to Table 1 per attached electrical schematic diagram 12E2493 for cable identification of vessel temperature monitoring equipment and attached electrical cable tabulation drawing 12E2907E for location and function of cables.

Cable	Equip. #	Service	Function	Type of Interactions
27404	263-69-A1	Reactor Vessel Flange Temperature	Thermocouple	Whip on Electrical
27408	263-69-B1	Reactor Vessel Steam Temperature	Thermocouple	Jet on Electrical
27412	263-69-C1	Reactor Vessel Below Water Level Temperature	Thermocouple	Jet on Electrical

Please address any questions you may have concerning this matter to this office.

One (1) signed original and thirty-nine (39) copies of this transmittal have been provided for your use.

Very truly yours,



Thomas J. Rausch
Nuclear Licensing Administrator
Boiling Water Reactors

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cc: RIII Resident Inspector, Dresden
Gregg Cwalina, SEP Integrated Assessment Project Manager (w/attach)