

October 27, 1982

Docket No. 50-213
LS05-82-10-077

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Mr. W. G. Council, Vice President
Nuclear Engineering and Operations
Connecticut Yankee Atomic Power Company
Post Office Box 270
Hartford, Connecticut 06101

Dear Mr. Council:

SUBJECT: PWR MAIN STEAM LINE BREAK WITH CONTINUED FEEDWATER ADDITION
REQUEST FOR ADDITIONAL INFORMATION - HADDAM NECK

We have completed a preliminary review of the Haddam Neck Plant concerning PWR Main Steam Line Breaks with Continued Feedwater Addition. Our contractor, Franklin Research Center, has identified in the attached Request for Additional Information a number of concerns and the additional information needed to resolve these concerns. We request that you supply this information within 30 days of the date of this letter. Please contact your Project Manager for further assistance in this regard.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Original signed by/

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

SEO1

DSU USE(08)

Enclosures:
As stated

cc w/enclosures:
See next page

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DATE ▶	10/15/82	10/27/82	10/27/82				

October 27, 1982

cc

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U. S. Environmental Protection Agency
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Resident Inspector
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Ronald C. Haynes, Regional Administrator
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BACKGROUND

Evaluation of the information contained in the January 30, 1980 [1] and March 5, 1980 [2] letters from Connecticut Yankee Atomic Power Company (CYAPCO) to the Nuclear Regulatory Commission (NRC) relating to the IE Bulletin 80-04, "Analysis of PWR Main Steam Line Break with Continued Feedwater Addition," revealed several items of concern. Additional information relating to these concerns is needed before a final evaluation can be made regarding the potential for exceeding containment design pressure or worsening of reactor return-to-power response.

The concerns and the additional information needed to resolve the concerns are identified in this Request for Additional Information.

Supplemental information now held by FRC relating to this matter is noted in the bibliography included in this request.

ITEM 1

CONCERN

IE Bulletin 80-04 directed the Licensee to review containment pressure response to a main steam line break (MSLB) accident to determine the impact of runout flow from the auxiliary feedwater (AFW) system and other energy sources. CYAPCO's response concerning the MSLB analysis for the Haddam Neck plant indicated that main steam isolation signal (MSIS) would not cause main feedwater (MFW) isolation. The analysis [1] assumed that MFW flow would follow control system response subsequent to a turbine trip, this assumes that the MFW regulating valves would fully open until

T_{ave} is less than 535 F at which time the valves would ramp closed. The analysis assumes AFW is initiated immediately. When AFW actuation occurs, the MFW bypass valves open to admit AFW to the steam generators.

CYAPCO's response is not sufficient to enable FRC to complete the evaluation of the potential for exceeding containment design pressure. Since it is not apparent that the MFW pumps are tripped upon receipt of a MSIS or safety injection signal, it is possible that additional feedwater would enter the affected steam generator through the MFW bypass valve. Since this additional flow was not accounted for in Reference 1, a reevaluation will have to be performed.

REQUEST

Please provide the following information concerning your analysis of containment pressure response to a MSLB with continued feedwater addition:

1. A determination of the MFW flow through the MFW bypass valve to the steam generators during a MSLB.
2. An evaluation of the potential for exceeding containment design pressure using the additional feedwater flow determined in Request 1 above.
3. Provide the time after the start of a MSLB when any operator action is taken to terminate the accident. Justify any operator actions that occur in less than 30 minutes.
4. An evaluation of the ability of the AFW pumps to operate at runout flow for 30 minutes without sustaining damage.

ITEM 2

CONCERN

IE Bulletin 80-04 directs the Licensee to review the reactivity increase which results from a MSLB inside or outside the containment.

If the evaluation of Item 1 above indicates that additional feedwater flow to the affected steam generator needs to be considered, the return-to-power analysis will have to be reevaluated.

REQUEST -

Please provide the following information concerning your analysis of reactivity response which results from a MSLB with continued feedwater addition:

1. An analysis of the core reactivity response to a MSLB with the additional feedwater flow determined in Item 1, Request 1 above.
2. The assumptions of the above analyses or sensitivity studies. (The assumptions should follow the recommendations of Section 15.1.5 of the Standard Review Plan.)

REFERENCE

1. W. G. Council (CYAPCO)
Letter fo D. L. Ziemann (NRC)
January 30, 1980
2. W. G. Council (CYAPCO)
Letter to B. H. Grier (NRC)
March 5, 1980

BIBLIOGRAPHY

1. W. G. Council (CYAPCO)
Letter to H. R. Denton (NRC)
December 6, 1979