



May 8, 1980
L-80-145

Central File
50-335

Mr. James P. O'Reilly, Director, Region II
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

Re: RII:JPO
50-335
IE Bulletin 80-04

We have reviewed the subject bulletin and our response is attached.

Very truly yours,

Robert E. Uhrig

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/MAS/cph

Attachment

cc: Harold F. Reis, Esquire

10:13 : 3:45

NOTE
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ATTACHMENT

Response to IE Bulletin 80-04

Analysis of a PWR Main Steam Line Break

With Continued Feedwater Addition

1. We have reviewed the containment response analysis for a main steam line break (as contained in the St. Lucie Unit 1 FSAR at Subsection 6.2.1.3.2 (c), at pages 6.2-41 through 6.2-49) and we have determined that the potential for containment pressurization did in fact address the impact of additional flow from the auxiliary or main feedwater system. Pertinent discussions presented in the FSAR are reiterated herein for your information.

The main feedwater isolation valves (I-MV-09-7, I-MV-09-8) are designed to close in 60 seconds or less and are surveillance tested in accordance with the plant Technical Specifications. Moreover both the main feedwater isolation valves and the main feedwater pump isolation valves (MV-09-1, MV-09-2) close on receipt of a Safety Injection Actuation Signal (SIAS) and/or a Main Steam Isolation Signal (MSIS). Thus for a main steam line break inside containment (the concern of IE Bulletin 80-04), main feedwater flow will be terminated very early in the transient by an SIAS which is generated at about 2 seconds.

The present Auxiliary Feedwater System (AFWS) for St. Lucie Unit 1 is manually initiated within 13 minutes; since the operator has ample time to distinguish the faulted steam generator by observing the redundant Class IE steam generator pressure and level indications, there will be no Auxiliary Feedwater added to the faulted steam generator. Analyses are underway to determine the effects of NRC-mandated installation of automatically initiated AFW flow. If the results indicate containment over-pressurization, retention of the manual AFW flow initiation should be a consideration. The following discussions are extracted directly from the St. Lucie Unit 1 FSAR at pages 6.2-41 and 6.2-42:

"The closure time for the steam line isolation valves is assumed to be a six second ramp that initiates on MSIS and the feedwater valves close on a sixty second ramp (testing has shown the feedwater isolation valves close in 20 seconds so that 60 second ramp is conservative) initiated by MSIS or SIAS."

"The code assumes closure of all steam generator isolation valves on MSIS for the faulted steam generator. In addition, back flow into the containment from the unfaulted steam generator via the main steamline header crosstie is assumed until isolation valve closure occurs."

"Assuming the worst case, i.e. single failure of the feedwater block valve (I-MV-09-7 or -8), the pump isolation valve closes in 60 seconds after receipt of MSIS or SIAS and approximately 107,000 pounds of feedwater are added to the faulted steam generator. The analysis conservatively assumed that the main feed pump operates at runout flow during valve closure and further that all of the high temperature fluid in the feedwater lines to the furthest isolation valve flashes into the containment."

"The highest containment pressure and temperature is found for the case of the 105 percent power (2698 MWT), 85 percent break area (5.355 ft²) steam line break."

We believe that the above discussions are responsive to this item in IE Bulletin 80-04.

2. The reactivity increase from a main steam line break, with the most reactive control rod in the fully withdrawn position, is analyzed in St. Lucie Unit 1 FSAR Subsection 15.4.6.2.2; boundary conditions as requested by IE Bulletin 80-04 are described therein. Potential water sources to the steam generator are considered as discussed in the response to Action Item 1 above.
3. Not applicable; see above responses.
4. This letter constitutes our review and evaluation of IE Bulletin 80-04 and no further actions are contemplated at this time.