TOLEDO EDISON

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July 13, 1979

Docket No. 50-346

License No. NPF-3

Serial No. 1-80

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

This letter is in response to IE Bulletin 79-13, as applicable to Davis-Besse Nuclear Power Station Unit No. 1. The portions applicable to Davis-Besse Unit No. 1, which require response at this time, are items 5(b) (Attachment 1), (c) (Attachment 2), and item 6 (Attachment 3).

Results of future examinations will be reported to you in accordance with this bulletin.

Yours very truly,

J L Grant/ssc

JSG/TWH

Attachments (3)

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ATTACHMENT 1

DAVIS-BESSE UNIT NO. 1 PROCEDURES FOR FEEDWATER LINE BREAKS
(BULLETIN ITEM 5b)

Davis-Besse Unit No. 1 presently has two Emergency Procedures for response to a break in a feedwater line:

A. EP 1202.26, "Loss of S.G. Feed". This procedure covers the response to a total loss of steam generator feed and the SFRCS actuation.

B. EP 1202.24, "Steam Supply System Rupture". This procedure covers a rupture in the feedwater or steam lines and the emergency actions required. The procedure is divided into major and minor leaks, and adequately covers the required actions.

Both procedures have been recently reviewed in light of the TMI-2 incident and this bulletin.

Davis-Besse Unit No. 1 presently monitors, on a shift basis, the containment normal sump inventory and verifies that the total unidentified leakage in containment is below 1 gpm per the Technical Specifications. This is done per ST 5099.01, "Miscellaneous Instrument Shift Check".

The following Alarm Procedures cover the annunciator alarms which could be associated with a feedwater line break:

AP 3004.06, "Containment Normal Sump Level High"
AP 3004.13, "Containment Pressure Differential to Annulus Greater Than 25 Inches"
AP 3004.17, (.18), "Containment Pressure Hi, SFAS Channel 1 (Channel 2) 2" (@ 16 psia)
AP 3005.52, "SFAS Containment Pressure Greater Than 18.4 psia Trip"

As described above, the procedures at Davis-Besse Nuclear Power Station Unit No. 1 are adequate in terms of both method and sensitivity for recognizing and responding to a feedwater line break accident.

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ATTACHMENT 2
(BULLETIN ITEM 5c)

METHODS AND SENSITIVITY OF FEEDWATER LEAK DETECTION IN CONTAINMENT

The following is a summary of the methods available for detection of a feedwater leak inside containment along with an approximation of the sensitivity of each method.

1. Containment Normal Sump

A small sump is located at the lowest point in containment which would collect any condensate from a feedwater leak in containment. The pumps in the sump have a capacity of approximately 80 gpm each, and the immediate indication of the sump inventory is a level indicator in the Control Room. Every shift during normal operation the operators monitor the containment sump inventory and calculate unidentified leakage by using pump run time from a time recorder on the sump pump motor breaker and the pump flow rate. This is performed as part of ST 5099.01, "Miscellaneous Instrument Shift Check".

This method will discover any unidentified flowrate of over 1 gpm. Identified leakage is measured reactor coolant pump seal leakage determined during cold shutdown as well as other known leakage, which also drains into the sump at a flowrate usually much less than the 10 gpm allowed by the Technical Specifications.

The sump discharge has sample piping installed which would allow an analysis of the sump water to determine if the increased leakage is from the primary or secondary systems.

The containment sump has an annunciator alarm (Alarm Procedure AP 3004.06) when level increases above 2'-2". This would require a leak greater than the capacity of both pumps, which are sequentially started at 1'-6" and 1'-10" of level in the sump.

2. Containment Air Coolers

The containment air coolers have a "condensate measuring system" which will activate if excess water is condensed by the containment air coolers. The coolers have an extremely small drain, which causes an increase in condensate level in the bottom of the cooler and actuates a level switch if excess condensation is present.

The sensitivity of this system is such that it is capable of detecting a 1 gpm leak in five minutes.

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3. Containment Pressure

High containment pressure alarms with annunciators are provided at:

A. A containment to annulus differential pressure of greater than 25 inches of water (Alarm Procedure AP 3004.13)

B. Containment pressure high in SFAS (Safety Features Actuation System) Channels 1 or 2 of greater than 16 psia (Alarm Procedure AP 3004.17, .18)

C. Containment pressure greater than 18.4 psia SFAS actuation and reactor trip (Alarm Procedure AP 3005.52)

The sensitivity of these systems would be highly reliant on the amount of steam that would condense. However, with the facility's large containment volume, a small feedwater line leak may not raise containment pressure sufficiently to cause the high pressure alarms.

A check of airborne radiation levels in containment by means of area monitors or direct samples would indicate if any leakage was from the primary or secondary system. A decrease in MWe and a subsequent attempt to increase reactor power by ICS (Integrated Control System) would indicate a main steam line leak and not a feedwater leak.

4. Feedwater Flow Indication

If a sufficiently sized feedwater leak existed to affect the difference in cold leg temperatures (ΔTc), the ICS would ratio feedwater to reduce ΔT_c. The feedwater demand would change as could be observed by the measured variable control room indication. Another ICS indication could be "RX Power Limited By FW" crosslimit alarm, which could result from the mismatch between feedwater and reactor power.

5. Steam and Feedwater Rupture Control System (SFRCS) Actuation

SFRCS would be tripped by a low steam generator level if insufficient feedwater was being supplied by the main feedwater system. This trip would isolate both steam generator (SG) secondary sides and would start one auxiliary feed pump (AFP) on each SG. Since the AFP's have less capacity than the main feedpumps, the affected SG would eventually go dry and then depressurize by blowing dry steam out the break. When the pressure on the affected SG goes below 600 psig, both AFP's would be automatically lined up to the unaffected SG by the SFRCS.

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ATTACHMENT 3

RESULTS OF EXAMINATION OF AUXILIARY FEEDWATER LINE
(BULLETIN ITEM 6)

In response to the oral request of NRC OIE Region III, Toledo Edison Company (TECo) has radiographically examined the seven (7) pipe-to-nozzle and elbow welds out to the first support on the auxiliary feedwater system line on steam generator 1-1. This examination was performed in accordance with the requirements of NC-5000 of ASME Section III and revealed no indications exceeding the acceptance standard of this code. In addition, TECo ultrasonically examined the internal auxiliary feedwater header to nozzle weld. This examination was performed in accordance with the requirements of ASME Section XI and revealed no indications exceeding the reporting requirements of this code.

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