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TOLEDO EDISON

Docket No. 50-346

License No. NPF-3

Serial No. 1-173

November 25, 1980

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 revises our previous response submitted on June 13, 1980 to IE Bulletin No. 80-06, dated March 13, 1980. The response attached addresses the Engineered Safety Feature (ESF) and other Safety Related Systems reset controls as it relates to the Davis-Besse Nuclear Power Station Unit No. 1.

Very truly yours,

RPC:TKR

Attachment

bj x/1

cc:
Louis Reyes, NRC Site Inspector

NRC Office of Inspection and Enforcement
Division of Reactor Operations Inspection
Washington, D.C. 20555

SUBMITTAL
FOR THE
DAVIS-BESSE NUCLEAR POWER STATION
UNIT 1
FACILITY OPERATING LICENSE NPF-3
IN RESPONSE TO A 10 CFR 50.54(f)
REQUEST DATED MARCH 13, 1980

This response is filed in accordance with 10 CFR 50.54(f) relating to Mr. James G. Keppler's letter of March 13, 1980. This deals with engineered safety features reset controls and revises the previous response submitted on June 13, 1980.

By _____
Vice President, Nuclear

Sworn to and subscribed before me the 25th of November, 1980.

_____
Notary Public

LINDA L. COOTER
Notary Public
My Commission Expires June 2, 1981

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ATTACHMENT 1
NRC IE BULLETIN 80-06 RESPONSE

Item 1: Review the drawings for all systems serving safety related functions at the schematic level to determine whether or not upon the reset of an ESF actuation signal, all associated safety related equipment remains in its emergency mode.

Response: After re-reviewing at the schematic/elementary level all safety related components affected by the Safety Features Actuation System (SFAS) and the Reactor Protection System (RPS), we have confirmed that a reset alone will not automatically remove any component from the required safety position.

Another safety related system is the Steam & Feedwater Rupture Control System (SFRCS). The SFRCS is an automatic self-resetting system whose purpose is to ensure an adequate feedwater supply to the NSSS steam generator to remove reactor decay heat during periods when the normal feedwater supply and/or electrical power supply to the essential auxiliaries is not available. In the event of a main feedwater line rupture, the SFRCS will align the auxiliary feedwater system to the unaffected steam generator. This is accomplished by suitably controlling the steam inlet valves and discharge valves associated with the auxiliary feedwater pumps (see FSAR Section 7.4.1.3). If the rupture condition for the affected steam generator is isolated, the system will automatically realign both auxiliary feed pumps to their respective steam generators.

Item 2: Verify the actual installed instrumentation and controls at the facility are consistent with the schematics reviewed in Item 1 above by conducting a test to demonstrate that all equipment remains in its emergency mode upon removal of the actuating signal and/or manual resetting of the various isolating or actuation signals. Provide a schedule for the performance of the testing in your response to this Bulletin.

Response: Following is a description of the tests performed on the systems serving safety related functions (SFAS, SFRCS and RPS).

The SFAS has two actuation channels. One channel (No. 2) was tested and verified for all the fans, pumps and the emergency diesel generator. For the high pressure injection (HPI) pump, the decay heat (DH) pump and the containment spray (CS) pump, the breakers were tested and verified. The rest of the pumps, fans and the emergency diesel generator were actually run and verified. The other channel (No. 1) is identical. The results confirmed our findings of Item 1.

Most all SFAS valves for both the channels were tested and the results confirmed our findings. The main steam isolation valves and the atmospheric vent valves were tested by way of monitoring their solenoids (energization and deenergization) and the results confirmed our findings of Item 1. These valves were not actually cycled for lack of steam in the operation mode when these valves were tested. The following valves could however not be tested for the reasons as given:

1. DH7A, DH9A, DH7B, DH9B (cycling these would have caused containment flooding).

2. DH2733 (due to the test set-up, cycling this valve would have unnecessarily added water from Borated Water Storage Tank t. the Reactor Coolant System).

3. DH2734 (the test set-up required, this valve to be open for providing suction to the decay heat pump 1-2 which was actually started).

4. DH13B, DH14B (the decay heat removal train containing these valves was in service and therefore these valves could not be cycled). Corresponding valves on the other channel were tested.

These valves which were not tested are all motor operated and their SFAS logic is identical to the one for other motor operated valves which underwent testing.

There are four conditions which can trip the SFRCS; i.e. low main steam line pressure, low steam generator level, differential pressure between the main feedwater line and the steam generator and the loss of all four reactor coolant pumps. The first three input trips isolate the steam generators in each case. The fourth input trip does not isolate the steam generators. The last three input trips also start the two auxiliary feedwater pumps (AFP) on their respective steam generators. The first input trip starts both AFPs on the unaffected steam generator (the steam generator with a low steam pressure is defined as the affected steam generator).

During the testing of SFRCS, all the associated valves with this system were tested as follows:

For a trip of SFRCS, all the associated valves except the atmospheric vent valves (ICS11A and ICS11B) were placed in the non-safety position before the trip. It was verified after the trip that these valves move to their safety position and remain there on a resetting of the trip.

The logic (relays) which activates the atmospheric vent valves was tested for the SFRCS trip. For these two valves, the relays which deenergize their solenoids (to close the valves) are actuated in an identical manner i.e. deenergized by SFAS and SFRCS. These valves were tested for SFAS as described earlier. During the performance of this SFRCS test, two feedwater valves FW779 and FW780 cycled, closed and opened continuously, on a SFRCS trip instead of going closed. This only happened when the valves' control switches were in the "OPEN" position.

During the actual reactor trips in the past, it has been shown that on resetting of the RPS, the associated control rod drive breakers do not automatically close.

Item 3: If any safety related equipment does not remain in its emergency mode upon reset of an ESF signal at your facility, describe proposed system modification, design change, or other corrective action planned to resolve the problem.

Response: The test results as described in Item 2 indicate that in the SFAS all safety related equipment tested remains in its emergency mode upon reset of the ESF trip signal. For RPS also, the safety related equipment remains in its emergency mode upon reset of Reactor Trip Signal.

In case of SFRCS, the controls of the two feedwater valves (FW779 and FW780) will be corrected by second refueling outage - presently scheduled for spring 1982. In the mean time, the station procedures have been revised so that the valves control switches cannot be left in the "OPEN" position.

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