Docket No. 50-346
License No. NPF-3
Serial No. 680
January 22, 1981

TOLEDO EDISON

RICHARD P. CROUSE
Vice President
Nuclear
(419) 259-5221

Director of Nuclear Reactor Regulation
Attention: Darrell G. Eisenhut, Director
Division of Licensing
United States Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Eisenhut:

On January 15, 1981, Toledo Edison submitted (letter Serial No.678) a revised package to support de-automation of Incident Level 5 of the Safety Features Actuation System (SFAS) at the Davis-Besse Nuclear Power Station, Unit 1, (DB-1). This proposal is for manual action to provide appropriate long-term post loss-of-coolant accident (LOCA) core cooling.

Several discussions between your staff and Toledo Edison transpired concerning this proposal. As a result, three issues remain to be clarified. The first deals with the verbal description of the proposed circuit configuration modification. Attached to this letter is a revision to Attachment C of our submittal of January 19, 1981 (Serial No. 679). The changes to provide clarification are identified by vertical bars in the margins.

The second item of concern deals with the methodology involved in the calculation of the minimum contained volume (MCV) submitted on January 15, 1981. As a result of discussions with your staff, an apparent difference exists in the application of uncertainties. The verification method used by your staff reflects the inclusion of an additional uncertainty factor. Although this appears to be a basic difference in methodology, the results are relatively insignificant. This is due to the inherent conservatism of the 360,000 gallon MCV value.

To look at this in more depth, the actual function of this volume is to guarantee that the new positive suction head (NPSH) requirements of the containment spray and decay heat (low pressure injection) pumps during the recirculation mode are available. Section 6.3.2.14 (page 6-79) of the DB-1 Final Safety Analysis Report (FSAR) identifies the NPSH required by the pumps on a per train basis. It also shows the minimum NPSH available to these pumps in the recirculation mode.

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This calculation was done with the 360,000 gallon MCV number. The resulting minimum water level in the containment vessel is an elevation of 567 feet 3/4 inches. The differences in apparent methodology can all be bounded for discussion purposes by assuming a reduction of 20,000 gallons. The minimum containment vessel water level assuming 340,000 gallons is 566 feet 9½ inches. This alters the actual elevation 3¼ inches. This can be directly related to an equivalent reduction in available NPSH, because both the levels associated with 360,000 and 340,000 gallons are above the 565 foot elevation floor. None of the factors except elevation change over these level variations. This effect for the most limiting pump case still results in greater than two feet of excess NPSH.

The final point deals with technical specification modifications to provide for additional surveillance.

These include:

a. terminology changes in Tables 3.3-3 and 4.3-2.

b. expansion of surveillance requirement 4.5.2.d.2 to verify the Borated Water Storage Tank and emergency sump suction valves do not move without the permissive tripped, and that with the permissive tripped they transfer within seventy-five seconds. This will delete item 7 on Table 3.3-5.

A proposed revision to the technical specifications reflecting a and b will be submitted within thirty days of your approval of the technical specification changes submitted January 15, 1981. Your approval of our submittal is required no later than January 23, 1981 to ensure there is no delay in our current schedule to return to power operation.

Very truly yours,

RPC:TJM:cts

cc: DB-1 NRC Resident Inspector

Attachment C
(Letter Serial No. 679, January 19, 1981)

Present Circuit Configuration

At present, under normal operating conditions, the BWST Outlet Valve is open and the Containment Emergency Sump Valve is closed. With no SFAS level 2 or level 5 signals present, an interlock (contract 14-33/ac) from the BWST Outlet Valve will prevent the "OPEN" circuit for the Containment Emergency Sump from being operated unless the BWST Outlet Valve is fully closed.

On a level 2 SFAS actuation, the KA and KB contacts from the SFAS will close in the "OPEN" circuit for the BWST Outlet Valve and open in the "CLOSE" circuit. In order to close the valve at this point, the SFAS level 2 will have to be blocked and then the valve can be moved manually. For the Containment Emergency Sump Valve, the operation of the KA and KB SFAS contacts is similar to those in the BWST Outlet Valve circuit except that the SFAS contact will insure that the valve remains closed.

A level 5 SFAS signal will affect the KC and KD contacts in both circuits. At present, in the BWST Outlet Valve circuit, the KC and KD contacts would open in the "OPEN" portion of the circuit, blocking the level 2 signal. In the "CLOSE" circuit, the KC and KD contacts will bypass the KA and KB contacts and automatically close the valve. At the same time the KC and KD contacts will open in the "CLOSE" circuit of the Containment Emergency Sump Valve, blocking the level 2 SFAS signal which will keep that valve closed. In the "OPEN" circuit of the valve, KC and KD contacts will bypass the KA and KB contacts and the interlock between the two valves. This will allow the automatic opening of the Containment Emergency Sump Valve.

Proposed Circuit Configuration

Under the proposed modification, the KC and KD contacts in the BWST Outlet Valve "OPEN" circuit will remain, blocking the level 2 SFAS signal when a level 5 trip occurs. The KC and KD contacts in the "CLOSE" portion of the circuit however will be disconnected. An interlock from the Containment Emergency Sump Valve (contact 7-33/bc) still will exist that will close this valve whenever the Containment Emergency Valve starts to open. In the Containment Emergency Sump Valve circuit the KC and KD contacts will remain in the "CLOSE" circuit as is, to block the level 2 signal on a level 5 actuation. In the "OPEN" circuit, wires for the KC and KD contacts will be moved in the motor control center so that the contacts will no longer bypass the KA and KB contacts. The other side of the KC and KD interlock in the "OPEN" circuit will be moved so that the interlock between the valves (contact 14-33/ac) - which prevents the opening of the Containment Emergency Sump Valve until the BWST Outlet Valve is closed - will be bypassed, allowing the operator to block level 2 and open Containment Emergency Sump Valve without closing the BWST Outlet Valve.

Attachment C
(Letter Serial No. 679, January 19, 1981)

The low-low level alarm which presently is on the annunciator, alarms whenever one of the four bistables associated with the four level transmitters on the BWST, trips. This alarm circuit is being modified to alarm not when the bistable trips but rather when the output logic modules of the SFAS are tripped. These output logic modules are all tripped when any two of the four sensor channels sense low-low level in the BWST. These are the same modules which control the KC and KD relays. The modified alarm will tell the operator to initiate a transfer at the same time as when a level 5 SFAS actuation (tripping of KC and KC contact) occurs. The legend of the alarm will be changed so that the operator will know that he has had a level 5 actuation and that he should initiate the manual transfer. | 1 | 1