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Davis

Docket No. 50-346

License No. NPF-3

Serial No. 1-472

October 22, 1984



RICHARD P. CROUSE  
Vice President  
Nuclear  
419/259-5221

Mr. James G. Keppler, Regional Administrator  
Region III  
United States Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

On January 29, 1981, the Nuclear Regulatory Commission (NRC), Region III, issued an Immediate Action Letter (IAL) (Log 1-467), to the Davis-Besse Nuclear Power Station, Unit 1, concerning water found in the containment electrical penetrations. The IAL required Toledo Edison to determine the root of the problem and establish a long term insulation resistance testing program.

The source of the water was identified as the cryogenic nitrogen system used to pressurize the penetration. The cryogenic nitrogen system was disconnected and replaced by a nitrogen bottle.

A spare conductor insulation resistance testing program was established after determining that the problem was associated only with the east bank electrical penetrations. A letter dated May 10, 1982 (Serial 1-265), identified Toledo Edison's intention to discontinue the testing program. A subsequent inspection by Region III identified resolution of the problem was insufficient and the testing program was reinstated.

In January, 1983, a monthly testing program was initiated to include insulation resistance test data from spare conductors in the west bank of electrical penetrations for comparison. A review of the megger test data for the six month period of May, 1983 to November, 1983, indicated that the majority of the megger readings were above the 100 megohm minimum required by IEEE 317, 1971. Although megger readings for some conductors have varied, none of the penetrations appear to exhibit trends which indicate deterioration. The variation in megger readings was also observed on the west bank of electrical penetrations which did not experience problems with water entering the nitrogen system.

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The safety function of the electrical penetration assembly is to carry nuclear safety related power, control, and low level (instrumentation) circuits through apertures in the containment vessel while maintaining integrity of the vessel. Insulation resistance testing of the spare conductors provides no safety function. The testing was performed to determine the capability of the east bank electrical penetrations to perform their safety function after moisture contaminated the nitrogen supply system. Additionally, as a good engineering practice, spare conductors are insulation resistance tested prior to being utilized.

Replacement of the nitrogen source to the electrical penetrations and evaluation of the test data obtained from the insulation resistance test program indicates resolution of the problem of moisture in the electrical penetration. Based upon this evaluation, Toledo Edison recommends discontinuing the testing program. The testing program will remain in effect until written notification from NRC Region III.

Very truly yours,

RPC:EWJ:SGW:nlf  
cc: DB-1 NRC Resident Inspector