



Docket No. 50-346

License No. NPF-3

Serial Nos. 1172 / 1-553

July 18, 1985

Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
United States Nuclear Regulatory Commission  
Washington, DC 20555

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

Gentlemen:

On June 9, 1985, the Davis-Besse Nuclear Power Station experienced a loss-of-main-feedwater transient. A number of equipment malfunctions and an operator error occurred during the course of this transient, resulting in a temporary loss of all feedwater flow. Following the transient, no feedwater was added to the secondary side of the steam generators for approximately 12 minutes. Feedwater flow was recovered through manual operation of the startup feedwater pump and the auxiliary feedwater system. No release of radioactivity occurred during the event. The plant was subsequently brought to a cold shutdown condition without adverse consequences and is presently being maintained in cold shutdown.

The occurrence of the transient was initially reported by telephone to NRC on June 9 in accordance with 10CFR50.72. Subsequent telephone conversations between Toledo Edison personnel and members of the Region III staff identified specific actions which must be taken prior to returning the plant to full operation. These actions were documented in NRC's Confirmatory Action Letter (CAL) dated June 10, 1985, and clarified in Toledo Edison's letter to Mr. Keppler dated July 1, 1985 (Serial No. 1-541). Additionally, a Fact Finding Team from NRC headquarters arrived at Davis-Besse during the week of June 10, 1985, to conduct an investigation of the event. The Fact Finding Team's investigation included extensive interaction with Toledo Edison personnel.

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The extent of equipment malfunctions and the operator error which were experienced during this event, with the resultant loss of all feedwater flow, are considered by Toledo Edison Company to be significant events. In recognition of this, Toledo Edison has instituted a comprehensive program to respond to the event, to identify the causes of the malfunctions which were experienced, to identify and implement those measures which are both necessary and sufficient to return Davis-Besse to safe operation, and to develop and plan those additional actions to be taken after restart. The Toledo Edison program set forth below encompasses more than the actions required by the NRC CAL.

The Toledo Edison program has five major goals:

- To thoroughly analyze the sequence of events. Toledo Edison's investigation of the various problems is intended to identify the root cause of each.
- Analyze the results of the investigation of the event to determine the existence of any possible potential safety questions.
- To define and implement prior to restart any actions necessary to assure safe operation. Determine those additional actions not necessary for restart that should be taken to further enhance reliability and facilitate safe operation and provide definitive plans for their accomplishment.
- To identify and correct weaknesses in plant programs, such as maintenance, training, procedures and administrative controls.
- To assure a complete response to the NRC Confirmatory Action Letter and other NRC-identified concerns.

The program is under the direction of the Group Director of Nuclear Facility Engineering, Mr. S. M. Quennoz. Mr. Quennoz's position is a new one, strengthening the direction of our engineering support personnel and augmenting their experience. Mr. Quennoz was formerly the Davis-Besse Plant Manager, and is intimately familiar with all aspects of plant design and operation. Under his direction, the program consists of several interrelated activities:

- Investigation of equipment malfunctions. Each instance of equipment malfunction during the event has been identified. Troubleshooting and testing is being conducted in accordance with detailed action plans reviewed by the NRC Fact Finding Team, to determine the root cause of each malfunction. Appropriate corrective actions will then be identified and implemented. Where past maintenance practices are found deficient appropriate actions will be implemented in the Davis-Besse Maintenance and Training Programs.

- Investigation of operator response to the event. Prompt action by Davis-Besse operations personnel was responsible for restoration of auxiliary feedwater flow in a rapid manner (12 minutes after the initiating event). Nevertheless, initial investigation has determined that an error was made which complicated the event or delayed recovery. The performance of operations personnel is being evaluated to identify areas where training should be improved. Operating procedures are also being reviewed in light of the experience gained in this event to assure they are clear and effective. The effect of information availability and equipment (human factors considerations) on operator response is also being evaluated.
- Evaluation of the impact of the event on plant systems or components. Any effects on plant systems and components which might have been produced by the sequence of events experienced during the transient are being evaluated.
- Evaluation of enhancements to plant design and operating practices to improve the reliability and availability of post trip decay heat removal. Changes considered under this activity are in addition to the corrective actions which will be identified for each equipment malfunction experienced (discussed above). This includes analysis and evaluation of potential improvements to various decay heat removal paths. For example, installation of a higher capacity startup feedwater pump will be accomplished as soon as possible. The optimum construction, tie-in and testing schedule and sequence is under development.
- Development of a comprehensive startup and power ascension plan. This recognizes that some testing will require the plant to be at operating temperature and pressure conditions. Testing of some equipment will be required to confirm results of the current investigations. This testing will be incorporated into an overall startup plan which will include appropriate hold points. The startup and power ascension plan will also address any testing or monitoring which may be required due to any system modifications implemented to enhance reliability of shutdown heat removal.

At the present time, the investigation is in its early stages. The equipment malfunctions and the operator and procedure issues requiring investigation have been identified and troubleshooting or evaluation is in process. A preliminary determination of root cause has been made for one of the equipment malfunctions, and a report describing the basis for this determination is undergoing internal review. Possible modifications to enhance reliability of shutdown heat removal methods have been identified; conceptual design engineering and investigation of equipment availability is underway.

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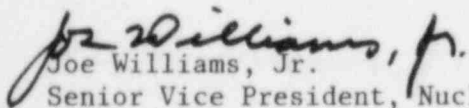
I will submit to you our program that will include both the details of individual troubleshooting and investigation with our overall conclusions, and describe the basis of our evaluation justifying return of the unit to power operation. In addition, this submittal will include a description of any other activities, reviewed in the light of this event, which will be implemented at Toledo Edison to continue to improve the future performance of Davis-Besse.

Independent of the June 9, 1985, event and the actions described above, Toledo Edison has taken other actions to improve the operation of Davis-Besse. These actions included a number of changes in senior management - Mr. S. M. Quennoz has become Group Director of Facility Engineering and a new Plant Manager, Mr. L. R. Storz, has been hired from outside the Company. Two other positions have been filled from outside the Company: Maintenance Superintendent, Mr. S. J. Smith, and Planning Superintendent, Mr. M. E. Schefers.

In addition to the actions outlined in this letter related to the incident, it is the intent to review all Davis-Besse programs in light of earlier concerns expressed by the NRC, to identify where improvements are required, to prioritize the accomplishment of these improvements and to devote the necessary resources to their completion.

In summary, it is Toledo Edison's intent to determine and correct not only those items identified as a result of the June 9, 1985, event, but also to take those actions which will result in improving the overall performance of the Davis-Besse Nuclear Plant. Members of my staff and I are always available to meet with you or your staffs at any time to discuss our efforts.

Very truly yours,

  
Joe Williams, Jr.  
Senior Vice President, Nuclear

JW:RFP:rs

cc: DB-1 NRC Resident Inspector  
Chairman Nunzio J. Palladino  
Commissioner Thomas M. Roberts  
Commissioner James K. Asselstine  
Commissioner Frederick M. Bernthal  
Commissioner Lando W. Zech, Jr.  
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