

Proposed Abnormal Occurrence

78-XX Diesel Generator Automatic Loading Sequence Failure

Date and Place - On June 5, 1978, Toledo Edison Company reported a design error at the Davis-Besse Unit 1 Nuclear Power Plant. The design error would have prevented the automatic sequencing of safety system loads on the emergency diesel generator buses under certain accident conditions.

Nature and Probable Consequences - Toledo Edison Company (TECo) notified the NRC that, during a refueling outage surveillance test of the Integrated Safety Features Actuation Systems (SFAS), a design error was discovered which would have prevented certain safety systems from functioning during a loss of offsite power followed by actuation of the SFAS. The design error involved a plant modification made in February 1977, which erroneously sealed in a number of relays in the SFAS system. This prevented the operation of the automatic load sequencer which serves to bring critical loads onto the emergency power bus at predetermined intervals. Sequencing is necessary to prevent overloading the diesel generator. This condition existed if a loss of offsite power occurred followed by an SFAS. If an SFAS occurred with normal offsite power available, the circuit would have performed normally. The design error was not discovered at the time the change was made because the scope of the testing conducted was not inclusive enough to detect the error.

While the event raises concerns relative to the management control of modification activities, the error is mitigated by the fact that the operator could have manually started the critical loads if required. Manual actuation of these circuits, however, is not an acceptable alternative since the operator cannot always respond within the time frames required.

Action Taken to Prevent Recurrence

Licensee - Establish and implement a system to verify that slide links *connectors* in safety related panels are in the correct position and that the holding screws are tight. Review management controls for slide links to assure that adequate controls have been established.

Establish and implement a program, including acceptance criteria, that verifies adequacy of procedures used to determine equipment operability. Design features that are not tested will be documented and justification for not testing will be provided. If segmented tests are used, ensure that proper overlap exists to completely test the change.

Review all safety related plant procedures related to the onsite and offsite power systems and verify that design features are not inadvertently defeated or compromised by operator action. Establish additional administrative controls to ensure that changes or modifications to systems are made utilizing drawings that have been verified as correct.

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NRC - Immediate NRC action was taken. An Immediate Action Letter was issued to the licensee on June 12, 1978. This letter outlined actions to be taken by the licensee to correct the present problem and to prevent recurrence. An inspector was dispatched to the site to verify corrective measures taken by the licensee as outlined in the Immediate Action Letter.