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Subject: Reactor Trip Breaker Preventive Maintenance Frequency

Ladies and Gentlemen:

The purpose of this letter is to inform the Nuclear Regulatory Commission (NRC) staff of a change to the preventive maintenance frequency for Reactor Trip Breakers (RTB) at the Davis-Besse Nuclear Power Station (DBNPS), Unit 1. NRC Generic Letter Number 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events," dated July 8, 1983 (Toledo Edison (TE) letter Log Number 1322), required licensees to establish a preventive maintenance and surveillance program for reactor trip breakers (Item 4.2.1).

Toledo Edison's commitments relative to the RTB preventive maintenance and surveillance program are referenced in Toledo Edison's letter to the NRC dated July 1, 1991, (TE letter Serial Number 1944). The NRC staff acceptance of the RTB preventive maintenance schedule is documented in the NRC's letter to Toledo Edison dated November 6, 1991, (TE Log Number 3620).

In July 1991, Toledo Edison committed to perform the non-Technical Specification RTB preventive maintenance at 18 month intervals with a possible maximum 25% extension to permit scheduling coincident with refueling outages, an increase from the previously committed 12 month interval.

Toledo Edison is currently proceeding with its plans to operate the DBNPS on a 24-month fuel cycle, rather than an 18-month fuel cycle. Although preventive maintenance can be performed at power, it requires removing each RTB from its cubicle and the associated Reactor Protection System (RPS) channel is tripped a minimum of six times during performance of maintenance and post-maintenance testing. With the RTB removed or RPS channel tripped, the plant is in a half trip condition and is vulnerable to spurious reactor trips.

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Toledo Edison has reviewed the surveillance test and preventive maintenance history of the DBNPS RTBs. Twelve years of maintenance history and data trending indicates that various RTB parameters (i.e., undervoltage device drop-out or pickup voltages, trip shaft torques, response times and insulation resistances) have been consistently found to be within the range of normal operation as a result of the existing preventive maintenance program at the DBNPS. Further, no significant changes were observed in these parameters when the preventive maintenance interval for the RTBs was increased from 12 to 18 months in 1991. The increase in preventive maintenance interval is not expected to result in a reduction in RTB reliability as determined by continued trending of these parameters. If the future trending of these parameters indicates a degrading trend the root cause will be determined and corrective action taken, which may include a decrease in the preventive maintenance interval.

Preventive maintenance will continue to be performed in house in accordance with General Electric (GE), the RTB manufacturer, service advisories on a 24-month frequency with a possible maximum extension of 25%. The DBNPS RTB preventive maintenance program has been audited and found acceptable by GE. The RTB maintenance history demonstrates the effectiveness of the preventive maintenance program and that the RTBs have been maintained in exceptionally good condition.

The change in preventive maintenance interval will not affect the functional testing required by the DBNPS Technical Specifications. Performance of the Technical Specification 3/4.3.1, Reactor Protection System (RPS) Instrumentation, functional test involves tripping each RTB twice, once using the undervoltage device and once by means of the shunt-trip device. The difference between the channel functional test and the RTB post-maintenance trip test is that the channel functional tests do not include a response time measurement. The Technical Specification functional tests will provide continued assurance of RTB reliability.

Industry operating experience indicates an improvement in reactor trip breaker reliability has been achieved primarily due to upgrades installed in response to Generic Letter 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events." NRC sponsored research, reported in NUREG-1366, "Improvements to Technical Specification Surveillance Requirements," December 1992, noted since diverse trip features were incorporated in reactor trip breakers, there have been significant improvements in breaker reliability.

In addition to the RTBs, the DBNPS RPS design incorporates two diverse means of removing power from the Control Rod Drive Mechanisms (CRDMs), thereby effecting a reactor trip independent of the RTBs. One of these trips is provided by the electronic trips C and D which interrupt power through the CRDMs by degating the motor return and the group power supply silicone controlled rectifiers (SCRs). The other trip signal is from the Diverse SCRAM System which degates the group power supply SCRs for the safety and regulating control rod groups. The existence of these diverse means of de-energizing CRDMs reduces the reliance on the RTBs and would

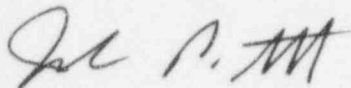
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tend to compensate for any unanticipated adverse effects of increasing the RTB preventive maintenance interval. The DBNPS RPS Instrumentation Technical Specifications includes operability and surveillance requirements for this diverse reactor trip mechanism.

In view of the increased potential for spurious trips during RTB preventive maintenance, the demonstrated RTB reliability and the DBNPS design which provides a diverse trip mechanism as an independent backup for the RTBs, Toledo Edison has concluded that it is appropriate to increase the RTB preventive maintenance interval to 24 months with a maximum 25% extension to permit scheduling coincident with planned refueling outages.

Should you have any questions or require additional information, please contact Mr. James L. Freels, Manager - Regulatory Affairs, at (419) 321-8466.

Very truly yours,



cc: L. L. Gundrum, DB-1 NRC/NRR Project Manager
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Utility Radiological Safety Board