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MICHIGAN'S PROGRESS**

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DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
INTERPRETATION OF TECHNICAL SPECIFICATIONS 3.4

During an engineering review of a Technical Specification (TS) test, System Engineering personnel identified a manual bypass valve required to be closed during accident conditions was being opened during the test. While testing the safety injection system (SIS) initiation circuitry during Technical Specification test QO-1, "Safety Injection System", with the Plant at power, the non-critical service water header bypass valve (MV-SW101) is opened while the non-critical header isolation valve (CV-1359) is stroked. The bypass is opened to maintain cooling water to turbine generator auxiliaries with the Plant at power operation.

Operation of the isolation valve is controlled by Technical Specification 3.4.1 which requires service water pumps, valves, piping, and interlocks to be operable. TS 3.4.2 allows one component to be inoperable provided corresponding redundant components are tested. The non-critical service water header isolation valve, CV-1359, could be assumed to have no redundant component since there is only one isolation valve. However, the cooling function provided by service water to critical components and containment following an accident can be met by several components (many of which are not totally redundant during every accident scenario). If service water flow was partially diverted due to failure of the non-critical isolation valve, CV-1359, to close the critical component cooling function would not be lost as long as three service water pumps remain operable i.e., the third service water pump is the functional redundant component. We therefore will require that all three service water pumps are operable while MV-SW101 is open during the QO-1 test to satisfy TS 3.4.2.

As noted in the NRCs final review of SEP Topic IX-3 (February 22, 1982) the single failure potential of CV-1359 exists but manual action to provide isolation was considered acceptable. An open non-critical service water header bypass valve, MV-SW101, while the non-critical isolation valve, CV-1359 is closed during the QO-1 test is essentially the same situation as failure of

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CV-1359 to isolate. However during the QO-1 test we will impose additional restrictions to ensure MV-SW101 is open for only a minimum time and have an operator stationed at the valve to close it in the event of an SIS. There would be ample time for operator action since, the maximum heat load occurs after the plant has entered the post accident recirculation mode, a minimum of 20 minutes following a safety injection signal.

We have evaluated the stroking of CV-1359 and have determined it is not technically appropriate for the long term operation of the Plant. Therefore, we will revise the test circuitry of the safety injection system to block the stroking of CV-1359. This modification will be installed during the 1988 refueling outage. Until the test circuitry can be revised, however, QO-1 will become due twice in the present design. The test procedure will be revised to minimize the time which the bypass valve MV-SW101 will be open and to assure it is open less than one hour for each performance of QO-1. The test procedure requires an operator stationed at the manual valve to be in direct communication with the Control Room while the bypass valve is open.

The following provides additional justification to continued operation of the test as modified to reduce the time MV-SW101 is open. This justification is predicated upon an evaluation of the probability of an accident occurring during the time that the test is being performed and shows that the chances of increasing the consequences of an accident to be remote. This justification includes a discussion of specific administrative controls in place during testing which addresses necessary actions in response to an accident situation.

The probability of occurrence of an accident involving a LOCA coincident with loss of offsite power is based on previously determined LOCA probabilities and loss of offsite power probabilities is approximately $3.0 \text{ E-}8$ events per hour. From discussions with Operations personnel familiar with performance of QO-1 and with changes being made to the procedure to minimize the amount of time that MV-SW101 is open during the test, it is conservatively estimated that MV-SW101 will be open for a maximum one hour during the test. The probability of the accident occurring during the test with MV-SW101 open is the product of the accident's probability and the time per test that MV-SW101 is open. This gives a probability of approximately $3.0 \text{ E-}8$ events per test. This represents one occurrence in approximately 33,000,000 performances of the test. Additionally, since the scenario described above does not assume loss of any service water pumps, there would still be ample service water flows to critical equipment.

To insure a timely response to an accident situation, the test procedure requires that an operator in constant radio contact with the Control Room be stationed at MV-SW101 during the time that the valve is open. In the event of an SIS while the MV-SW101 is open, the operator will be able to immediately close the valve. Additionally maximum service water to critical components is not required until after recirculation from the containment sump has begun, a minimum of twenty minutes. This action would further ensure adequate service water flows to all critical equipment.

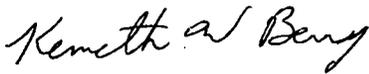
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In conclusion the requirements of TS 3.4.2 are met by our interpretation that the third service water pumps is redundant to the non-critical service water isolation valve CV-1359. Additional requirements are being implemented to require; 1) the service water pumps be operable when CV-1359 is closed and MV-SW101 (as required by TS 3.4.2) is open during the QO-1 test; 2) minimize the time that MV-SW101 is open during the QO-1 test; and 3) an operator will be stationed at MV-SW101, be in direct contact with the control room, for the purpose of closing the valve in the event of an SIS.

The next scheduled performance of QO-1 is due April 25, 1988 with a 1.25 time period of May 15, 1988. The second scheduled performance of QO-1 would be July 25, 1988. Only these two performances are expected prior to the 1988 refueling outage at which time the test circuitry will be modified. This test schedule will be modified to have the test performed during a forced or scheduled shutdown if one were to occur prior to the required test date.

This interpretation and justification for conducting the QO-1 test is based on our belief that no Technical Specifications need to be modified. We ask the NRC staff to expedite their review and promptly notify Consumers Power of any differences in interpretation. The commitments specified within this interpretation will remain in effect until the modifications to CV-1359 have been completed.



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