

SAFETY EVALUATION REPORT FOR
OYSTER CREEK NUCLEAR GENERATING STATION
IPSAR SECTION 4.26.2
INSTRUMENTATION FOR REACTOR TRIP SYSTEM TESTING

I. INTRODUCTION

The staff, in the Integrated Plant Safety Assessment for the Oyster Creek Nuclear Generating Station (NUREG-0822), Section 4.26.2, identified a concern that the plant Technical Specifications (TS) do not require testing of certain portions of the reactor trip system (RTS) logic path. The staff review concluded that the plant Technical Specifications did not explicitly require a test of the reactor mode switch (shutdown position). Further, for the containment spray system, the TS did not explicitly identify all the instruments (channels) for testing. Thus, the staff concluded that it was possible that no (or incomplete) surveillance would be performed on the logic channels for some safety systems.

The staff position in the integrated assessment was that testing of each logic path and instrument should be included in the plant Technical Specifications, based on the RTS importance to safety. The licensee agreed and committed to amend the Technical Specifications to incorporate testing of all RTS components prior to startup from the Cycle X refueling outage.

II. EVALUATION

Subsequently, by a letter dated May 31, 1984, the licensee provided the results of its review of protective instrumentation testing currently required by either plant procedures or Technical Specifications.

The licensee noted that although an explicit test of the reactor mode switch is not specified in the TS, the switch is tested in various positions when other logic channels are tested. Attachment 1 of the May 31, 1984 submittal shows for each contact in the switch, the tests that are performed, associated TS requirements and which position (RUN, SHUTDOWN etc) the switch would be in. In particular, TS 4.2.H requires that once per refueling cycle the mode switch be placed in the shutdown position and operability of the scram discharge volume vent and drain valves be demonstrated. This is consistent with the BWR Standard Technical Specifications (STS) frequency for functional test of the mode switch shutdown position. Each set of contacts in the switch that is used is tested by at least one plant procedure associated with a TS requirement. The staff therefore concludes that the testing being performed is sufficient to test the functioning of the mode switch.

The concern raised during the topic review concerning the containment spray system was that some logic channels, such as high drywell pressure, were not identified in the TS for testing. Containment spray is initiated by high drywell pressure and low-low reactor water level. The staff notes that TS Table 4.1.1 establishes calibration and test

frequencies for protective instrumentation including low-low water level and high drywell pressure but does not always identify the specific function, such as scram, core cooling, containment spray, that the instrument channel initiates. TS Table 4.1.2 specifies a test frequency for containment spray for testing each trip system one at a time quarterly and at each refueling but it does not identify the specific trip instrument channel (e.g., high drywell pressure).

The licensee has developed a cross-reference indexing system between the Technical Specifications and plant surveillance procedures. This index will show the correspondence between the testing of instrumentation and the logic channels and trip systems by the surveillance procedures and the TS requirements. This will relate the surveillance test frequency of specific instrument channels in TS Table 4.1.1 to the surveillance test frequency of specific trip systems or functions in TS Table 4.1.2. This relationship is in the BWR STS but not in the Oyster Creek TS. This index will ensure completeness of testing at Oyster Creek.

The staff, therefore, concludes that the testing being required in the TS and the index system should be sufficient for the required testing of the containment spray system logic channels. However, the staff will review the index system before concluding this issue is completely resolved.

III. CONCLUSION

The staff concludes that the present TS requirements, as supplemented by the cross-reference indexing system, should be adequate to ensure needed testing of safety system instrumentation. The licensee is requested to provide the index to the staff so that the staff can complete its review of this issue.

IV. REFERENCES

1. Integrated Plant Safety Assessment for the Oyster Creek Nuclear Generating Station, NUREG-0822, January 1983.
2. Letter to D. Crutchfield (NRC) from P. Fiedler (GPU), Subject: SEP Topic No. VI-10.A, "Testing of Reactor Trip System and Engineered Safety Features, Including Response-Time Testing," dated May 31, 1984.

V. ACKNOWLEDGEMENT

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