

UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20055

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO AMENDMENT NO. 77 TO FACILITY OPERATING LICENSE NO. NPF-11 AND AMENDMENT NO. 61 TO FACILITY OPERATING LICENSE NO. NPF-18

CCMMONWEALTH EDISON COMPANY

LASALLE COUNTY STATION, UNITS 1 AND 2

DOCKET NOS. 50-373 AND 50-374

1.0 INTRODUCTION

By letter dated July 26, 1989, Commonwealth Edison Company (the licensee) proposed a technical specification (TS) amendment for LaSalle County Station, Units 1 and 2, to allow continued plant operation for a period of 12 hours with the main steam tunnel (MST) high ambient temperature and high ventilation system differential temperature trips bypassed. The licensee provided additional information that did not change the initial no significant hazards consideration determination in letters dated July 9, 1990, December 5, 1990, January 2, 1991, and January 18, 1991. Specifically, the licensee proposed changes to TS Table 3.3.2-1 and the associated Bases 3/4.3.2 to allow bypassing of NST temperature trips for a period of up to 4 hours for reactor building ventilation system maintenance, filter changes, damper cycling and surveillance tests and for a period of up to 12 hours for secondary containment leak rate tests. The licensee indicated that this change is required to prevent a two unit outage and unnecessary Group I isolation (main steam valves) during containment leak rate testing and ventilation system surveillance and maintenance activities due to common reactor building ventilation system at LaSalle Station.

2.0 EVALUATION

The licensee indicated that the MST ambient air temperature and ventilation system differential temperature sensors are used for the detection of small leaks in the MST. The temperature sensors for these parameters are set to annunciate in the control room whenever an air temperature increase corresponding to a 5 gpm leak is detected and to cause a Group I primary containment isolation (PCI) trip when a 25 gpm leak is detected. Approximately 90 percent of the reactor building ventilation system air flow passes through the Units 1 and 2 main steam tunnels and therefore detection of small leak rates requires the trip setpoints to be set very close to normal operating temperatures. At LaSalle, the secondary containment buildings for Unit 1 and 2 are joined, making it necessary to perform the containment leak rate test on both units simultaneously. During the performance of the test, the reactor building ventilation system for both units must be shut down to demonstrate that the standby gas treatment system is capable of maintaining a negative

9104020387 910321 PDR ADOCK 05000373 PDR ADOCK 05000373 pressure in the secondary containment. Operation of the units is limited during the test by the MST temperatures. With either unit operating and the ventilation system shutdown, the MST temperature increases rapidly and will cause a Group I isolation (MSIV closure) on each operating unit. As a result, this test is scheduled during a two unit outage.

The licensee indicated that the cortainment leak rate test to demonstrate that both the inner and outer doors of the reactor building trackway are leak tight requires 6 to 8 hours. The requested bypass temperature trips for 12 hours will provide enough time for unanticipated difficulties.

The licensee also indicated that bypass of both temperature trips for up to 4 hours is needed for preventive maintenance of reactor building ventilation system, filter changes, damper cycling and surveillance testing. The present TS allows that one trip system (high differential temperature) can be bypassed up to 4 hours during above activities. The licensee indicated that this is not very useful as the MST temperature rises quickly during shutdown of the ventilation system causing unnecessary challenges to reactor safety systems.

The licensee indicated that other trips will be available which can detect main steam leakage outside of the primary containment and cause automatic Group I isolation. These are (a) low main steam line pressure (operating condition 1 only), (b) high main steam line flow rate, and (c) low reactor water level.

The licensee proposed to revise the station operating procedures as a compensatory measure to establish special logs to monitor indications of MST steam leakage and abnormal temperatures. These logs will be initiated 4 hours prior to the tests and will monitor every one-half hour: (a) floor drain sumps which collect leakage of systems in the MST, (b) main condenser normal makeup flow rate for leakage, and (c) MST ambient temperature to ensure that the temperature limit for environmentally qualified equipment is not exceeded. The shift operating and maintenance personnel will be briefed about the test procedures, trip bypass and the purpose of special logs.

The licensee also indicated that it has performed a risk based evaluation to determine the effects on plant safety of removing the MST ambient and differential temperature trips. The analysis indicates that the reliability of the MSIVs to close in response to a steam line break outside the containment will not be significantly compromised by removal of MST temperature trip sensors as part of trip logic. The small increase in risk to plant safety due to small line breaks which quickly propagate to large breaks will be offset by the reduction in risk to plant safety posed by the challenges to safety systems caused by "purious MSIV closures.

The licensee also indicated that the bypassing of the temperature trips will not create the possibility of a new or different kind of accident from any accident previously evaluated. The safety evaluation in Section 15.6.4 of the UFSAR does not include an analysis of small steam leaks. The only analysis is for a catastrophic failure of a main steam line which represents the envelope evaluation of steam line failures outside of the containment. The staff has reviewed the licensee submittals as discussed above and concurs that the MST temperature trips are not the only primary means of protection against a major leak in the MST. The MST temperature detectors provide a means for early detection of small steam breaks from the pressure boundary. Eased on the unique common design of the LaSalle Station reactor building ventilation system, the effects of spurious isolation on the safety systems, and the proposed compensatory measures provided, the staff concludes that the requested bypassing of the MST temperature trips for containment leak rate testing and maintenance of reactor building ventilation system will not significantly reduce the margin of safety or create the possibility of a new or different kind of accident from any accident previously evaluated and therefore is acceptable.

Eased on the above evaluation, the staff concludes that the proposed technical specification changes to TS Table 3.3.2-1 to allow continued plant operation with the MST ambient and high ventilation systems differential temperature trips for a period of up to 12 hours during containment leak rate testing and for a period up to 4 hours during reactor building ventilation system maintenance, filter changes, damper cycling and surveillance testing are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted areas as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no such finding (54 FR 40926). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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