



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NO. NPF-11 AND
AMENDMENT NO. 82 TO FACILITY OPERATING LICENSE NO. NPF-18
COMMONWEALTH EDISON COMPANY
LASALLE COUNTY STATION, UNITS 1 AND 2
DOCKET NOS. 50-373 AND 50-374

1.0 INTRODUCTION

By letter dated January 24, 1994, Commonwealth Edison Company (CECo), the licensee, requested an amendment to Facility Operating License No. NPF-11 and Facility Operating License No. NPF-18 for the LaSalle County Station, Units 1 and 2 (LaSalle). The proposed amendment would modify the technical specifications (TS) to incorporate line-item TS improvement 5.9 of Generic Letter (GL) 93-05, "Response Time Testing of Isolation Actuation Instrumentation," that was identified by the staff of the U.S. Nuclear Regulatory Commission (NRC), as reported in NUREG-1366, "Improvements to Technical Specification Surveillance Requirements," December 1992.

The NUREG-1366 TS improvements were based on an NRC study of Surveillance Requirements and included information provided by licensee personnel that plan, manage, and perform surveillances. The study included insights from a qualitative risk assessment of surveillance requirements (SRs) based on the standard technical specifications for Westinghouse plants and the TS for the Edwin I. Hatch Nuclear Plant, Unit 2. The staff examined operational data from licensee event reports, the nuclear plant reliability data system (NPRDS), and other sources to assess the effect of TS SRs on plant operation. The staff evaluated the effect of longer surveillance intervals to reduce the possibility for plant transients, wear on equipment, personnel radiation exposure, and burden on personnel resources. Finally, the staff considered surveillance activities for which the safety benefits are small and not justified when compared to the effects of these activities on the safety of personnel and the plant.

The NRC issued guidance on the proposed TS changes to all holders of operating licenses or construction permits for nuclear power reactors in GL 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," issued on September 27, 1993.

2.0 EVALUATION

The licensee has proposed a change to the LaSalle TSs which eliminates isolation system instrumentation response time testing where the required time corresponds to the emergency diesel generator start time as recommended in NRC GL 93-05. In these cases, which involve non-MSIV (Main Steam Isolation Valve) instrument loops, the instrumentation loop response times are a small fraction of the total allowable system response time requirements.

2.1 Current TS Requirements

TS 3.3.2 requires that the isolation actuation instrumentation channels shown in TS Table 3.3.2-1 be operable with their trip setpoints set consistently with the values shown in the Trip Setpoint column of TS Table 3.3.2-2, and with isolation system response time as shown in TS Table 3.3.2-3.

TS SR 4.3.2.1 requires that the isolation actuation instrumentation channels be demonstrated operable by performing channel checks, functional tests, and calibrations. TS SR 4.3.2.2 requires the performance of logic system functional tests and simulated automatic operation of all channels at least once per 18 months.

TS SR 4.3.2.3 requires that the isolation system response time of each isolation trip function shown in TS Table 3.3.2-2 be demonstrated within its limit at least once per 18 months.

2.2 Bases for Current TS Requirements

Boiling water reactors (BWRs) are designed with the capability to isolate portions of systems to retain reactor vessel inventory to limit the consequences of line breaks. Except for the MSIVs, the plant safety analyses do not address individual sensor response times or the response times of the logic systems to which the sensors are connected. The analyses also assume that instrument channel actuation for non-MSIV channels occurs simultaneously with diesel generator start. The required TS response times include the instrument response time (typically measured in fractions of a second), the response times of the actuation logic circuits (typically less than a second), and the diesel generator start time (13 seconds).

The performance of these SRs is intended to facilitate the detection of degraded components and/or system conditions which could potentially adversely affect isolation actuation instrumentation system response times. These SRs serve to ensure that overall system reliability is assured and to gather data to monitor instrument channel response time trends.

2.3 Proposed TSs

The isolation actuation instrumentation logic functions are in parallel with the startup of the diesel generators. The 13 second response time requirement is therefore not critical for the isolation circuits subject to the proposed

TS change. The proposed change for instrumentation response time testing involves tests where the instrumentation loop response time is a very small fraction of the total allowable system response time requirement.

Based on operational history, the chance is very remote that a channel's response time would degrade to the point where it exceeds the 13 second diesel start time without a failure that would be noticeable by some other means such as instrument channel checks, channel functional tests, channel calibrations, and logic system functional tests.

The performance of conventional response time tests has been of little value in assuring that instrumentation will perform as required or for determining the health of the instrument. The majority of allowable instrumentation response times are much longer than instrument circuits require for signal processing from sensor input to final output signal. Additionally, the instrument response time is small compared to safety system actuation times.

With the exception of the MSIVs, the 13 second response time items in TS Table 3.3.2-3 and the associated superscripted footnotes are proposed to be deleted. TS bases 3/4.3.2 is to be correspondingly revised to reflect this. The licensee also proposes to delete the discussion of the 3 second delay and failure of D.C. operated valves from the TS Bases, since D.C. operated valves do not serve an isolation function.

TS SR 4.3.2.1 maintains the requirement that the isolation actuation instrumentation channels be demonstrated operable by performing channel checks, functional tests, and calibrations for the operational conditions and at the frequencies shown in Table 4.3.2.1-1.

TS SR 4.3.2.2 maintains the requirement to perform logic system functional tests and simulated automatic operation of all channels at least once per 18 months.

Eliminating the response time testing where the required time corresponds to the diesel start time will reduce an unnecessary burden on personnel resources by eliminating the amount of testing required by the TS. The proposed change eliminates response time testing of both the sensors and the logic systems to which they are connected, which happen to be very small in comparison to the assumed 13-second diesel generator delay.

The performance of TS SR 4.3.2.1 and 4.3.2.2 provides a method to detect degraded components and/or system conditions which could adversely affect isolation actuation instrumentation. The ability to enhance overall system reliability and to monitor instrument channel response time trends is maintained. Response times which exceed acceptable limits assumed in safety analyses will remain detectable. This ensures the effectiveness of the instrumentation used to mitigate the consequences of accidents.

The licensee has indicated that the proposed change will improve plant safety, decrease equipment degradation, relieve an unnecessary burden on personnel

resources, and save cost expenditures by reducing the amount of testing required by the TS.

The proposed TS modifications are consistent with the guidance provided in GL 93-05. This guidance is based on the NRC staff findings and recommendations stated in NUREG-1366. In addition, the licensee states that the proposed TS changes are compatible with plant operating experience. The staff concludes that the proposed TS changes do not adversely affect plant safety and will result in a net benefit to the safe operation of the facility, and, therefore, 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 amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. 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 significant hazards consideration, and there has been no public comment on such finding (59 FR 7686). 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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