



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO.149 TO FACILITY OPERATING LICENSE NO. NPF-14
AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NO. NPF-22
PENNSYLVANIA POWER & LIGHT COMPANY
ALLEGHENY ELECTRIC COOPERATIVE, INC.
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2
DOCKET NOS. 50-387 AND 388

1.0 INTRODUCTION

By letter dated March 15, 1995, as supplemented by letter dated August 4, 1995, the Pennsylvania Power and Light Company (PP&L, the licensee) submitted a request for changes to the Susquehanna Steam Electric Station (SSES), Units 1 and 2, Technical Specifications (TS). The requested changes would modify the SSES Technical Specification Table 3.6.3-1, Primary Containment Isolation Valves, to reflect an exemption from 10 CFR Part 50, Appendix J, Section II.H.4, concerning the scope of Type C testing on specified emergency core cooling system and reactor core isolation cooling containment isolation valves. An exemption from the regulations was also requested in the March 15, 1995, letter. Specifically, the licensee indicated that the subject valves on systems which terminate below the minimum water level of the suppression pool and are associated with closed systems, will no longer require Type C testing but would instead be tested using requirements of the American Society of Mechanical Engineers' (ASME) Boiler and Pressure Vessel (B&PV) Section XI Code. In the August 4, 1995 letter, PP&L amended the application to delete the exemption request and modified the TS change accordingly. The August 5, 1995 supplemental letter did not change the initial proposed no significant hazards consideration determination nor the Federal Register notice.

2.0 BACKGROUND

The Code of Federal Regulations, 10 CFR Part 50, Appendix J, establishes requirements for containment leakage tests for all operating licenses for water-cooled power reactors. Three tests are specified in the regulation; Type A (integrated leakage), Type B (penetration local leakage), and Type C (containment isolation valve (CIV) local leakage). A CIV is defined in Appendix J as "any valve which is relied upon to perform a containment isolation function." Containment is defined as "...an essentially leak-tight

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barrier against the uncontrolled release of radioactivity to the environment." Therefore, the staff considers an Appendix J CIV to be a valve which could represent a potential fission product release pathway to the environment following a postulated accident and consequently, its allowable leakage should be minimized.

3.0 EVALUATION

The proposed TS change for SSES Units 1 and 2 deals with Type C testing. Appendix J specifies the types of CIVs which are required to be Type C tested. PP&L maintains programs and procedures to perform Type C tests and will continue to perform these tests on many CIVs. Specifically, PP&L performs hydrostatic tests of certain CIVs per Technical Specification 3.6.1.2.e and Table 3.6.3-1. These valves are subject to note (b) of Table 3.6.3-1 which states that the valves are tested with water, and that valve leakage is not included in calculating the total leakage for Type B and C tests (0.6 La). Technical Specification 3.6.1.2.e establishes a combined leakage rate of less than or equal to 3.3 gpm for hydrostatically tested lines. This leakage limit is based on the liquid volume of the suppression pool and the design requirement to maintain a 30-day supply of water in the pool without exposing the uppermost valve line to primary containment atmosphere. However, not all CIVs currently included in the testing regime benefit from the Type C testing requirement.

In its submittal, the licensee requested exclusion from the Appendix J Type C tests for some valves because it is unnecessary to Type C test CIVs on lines that penetrate the suppression pool and terminate below the minimum water level. The subject CIVs serve lines in the high pressure core injection (HPCI), reactor core isolation cooling (RCIC), core spray, and residual heat removal (RHR) systems. The technical basis for not Type C testing the CIVs is the fact that existing barriers to primary containment leakage will remain unchanged and the suppression pool level is assured for 30 days during all design basis, post accident modes of operation. For these lines which terminate below the minimum suppression pool water level, the maintained pool inventory serves as a continuous passive barrier to containment atmospheric leakage.

The proposed TS change identifies the specific valves which no longer require Type C testing. A new footnote "g" is added relating to each of these CIVs which reads as follows:

Containment Isolation Valve(s) are not Type C tested. Containment by-pass leakage is prevented since the line terminates below the minimum water level in the Suppression Chamber. Refer to Specification 4.0.5.

The following CIVs are affected by the change:

HV1(2)55F042-HPCI Pump Suction from Suppression Pool,
HV1(2)49F031-RCIC Pump Suction from Suppression Pool,
HV1(2)55F012,1(2)55F046-HPCI Pump Minimum Flow bypass to Suppression Pool,

FV1(2)49F019, 1(2)49F021-RCIC Pump Minimum Flow Bypass to Suppression Pool,
HV1(2)51F004A,B,C,D-RHR Pump Suction Lines,
HV1(2)51F007A,B-RHR Pump Recirc Flow to Suppression Pool,
HV1(2)52F001A,B-Core Spray pump Suction Lines,
HV1(2)52F051A,B-Core Spray System Test Returns to Suppression Pool,
HV1(2)52F031A,B-Core Spray Pump Minimum Flow Bypass to Suppression Pool.

In lieu of the Type C testing, PP&L has committed to testing these valves per the applicable inservice testing requirements in accordance with ASME/ANSI Operations and Maintenance OM-1987 (Addenda OMA-1988), Part 10, Paragraph 3. The valves are to be reclassified and tested as ASME, Section XI, Category B, valves.

The staff notes as stated in the Final Safety Analysis Report (FSAR) for SSES, Units 1 and 2, that the subject CIVs are located in systems for which the system and the associated piping are protected against missiles and pipe whip, are designed to seismic Category I requirements and are classified as Quality, Group B per Regulatory Guide 1.26 (RG 1.26). The systems and piping will not be adversely affected by single active failures.

The suppression pool will remain filled with water for at least 30 days following the onset of an accident. The staff finds that the subject CIVs, therefore, do not constitute potential containment atmosphere leak paths, and as such are not required by Paragraph III.A.1.(d) of Appendix J to be Type C tested. Additionally, in accordance with Sections III.C.2 and III.C.3 of Appendix J, the CIVs need not be tested with air. Further, it is not necessary to test them with water, as the purpose of the water leak rate test is to assure a supply of sealing water for 30 days following the onset of an accident. As the torus is postulated to always remain filled with water, no leak rate test is necessary to satisfy Appendix J requirements. The CIVs will, however, continue to be tested pursuant to the applicable requirements of Section XI of the ASME B&PV Code. In support of the requested change, the licensee indicated that these systems were "closed systems." The staff position on closed systems could result in these systems not being classified as "closed systems", however, the system classification does not affect the staff's safety finding.

As discussed with the licensee, a discussion of the effective date for implementation of the deletion of footnote (f) has been added to TS page 3/4 6-28.

For the above reasons, the staff finds the proposed testing of the CIVs in the above penetrations to be in compliance with the requirements of Appendix J and finds that no exemption from the regulation is required.

The staff has evaluated the licensee's requested TS changes and based on the systems' design configuration and function, finds the proposed alternate testing of the CIVs to be acceptable along with the TS changes.

Based on the above evaluation, the staff concludes that the proposed changes to TSs Table 3.6.3-1 for elimination of 10 CFR Part 50, Appendix J, Type C leak rate testing for certain CIVs, which are located in lines that penetrate the primary containment and terminate below the minimum water level in the suppression pool, are acceptable. The proposed changes will not affect the existing radiological release evaluations currently described in the Susquehanna Steam Electric Station FSAR or result in a reduction in the margin of safety.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania 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 installation or use of a facility component located within the restricted area 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 significant hazards consideration, and there has been no public comment on such finding (60 FR 20521). Accordingly, the amendments meet 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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