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SUBJECT: Forwards proposed amends 196 & 154 to licenses NPF-14 & NPF-22, respectively, revising TS to implement 10CFR50, App J, Option B per guidance in final rule re primary reactor containment leakage testing for water-cooled power reactors. *See* *Proposed Change to Tech Spec* **C**
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FEB 12 1996

U.S. Nuclear Regulatory Commission
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**SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED AMENDMENT NO. 196 TO LICENSE NPF-14 AND
PROPOSED AMENDMENT NO. 154 TO LICENSE NPF-22:
ADOPTION OF 10 CFR 50 APPENDIX J OPTION B
PLA-4414**

Docket Nos. 50-387
and 50-388

FILES R41-1/A17-2

The purpose of this letter is to notify the NRC of Pennsylvania Power & Light (PP&L) Company's desire to perform containment leakage-rate testing in accordance with 10 CFR 50, Appendix J, Option B. In addition, PP&L proposes changes to Susquehanna SES Units 1 and 2 Technical Specifications to implement the requirements of Option B. This notification and proposed Technical Specification changes are being submitted in accordance with the guidance provided in the final rule regarding Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors.

The attached analysis discusses the safety basis for the proposed Technical Specification changes and concludes that the changes involve no significant hazards. The changes have been reviewed by the Plant Operations Review Committee and the Susquehanna Review Committee. We are committed to making these changes to achieve the manpower cost and radiation exposure reduction benefits which can be realized through performance based testing. The proposed changes are expected to yield annualized benefits in excess of \$480,000 for the remainder of plant life. The proposed changes meet the Cost Beneficial Licensing Action criteria as outlined in NRC Administrative Letter, 95-02.

We would like to implement the proposed changes in support of our upcoming refueling outage on Susquehanna Unit 1. As a result, we ask that the NRC complete its review by May 15, 1996. Any questions regarding this request should be directed to Mr. Terence Bannon at (610) 774-4019.

Very truly yours,

9602160123 960212
PDR ADOCK 05000387
P PDR



R. G. Byram

Attachment

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101084

copy: Regional Administrator - Region I
Ms. M. Banerjee, NRC Sr. Resident Inspector
Mr. C. Poslusny, Jr., NRC Sr. Project Manager
Mr. W.P. Dornsife, Pa. DEP

**SAFETY ASSESSMENT
ADOPTION OF 10 CFR 50 APPENDIX J OPTION B**

BACKGROUND

The safety objective for reactor containments is stated in 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants." General Design Criterion (GDC) 16, "Containment Design" requires "an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment..." for postulated accidents. The previous version of 10 CFR Part 50, Appendix J implemented GDC 16 through prescriptive containment leakage testing requirements that stipulated the tests that should be performed, the frequency of testing, and reporting of test results.

The revised 10 CFR 50, Appendix J regulation maintains the prescriptive leakage testing requirements (now referred to as Option A), but now recognizes a performance-based leakage testing program (referred to as Option B) as an acceptable alternative to the prescriptive requirements. This performance-based leakage testing approach allows test intervals to be based on system and component testing performance, thereby providing greater flexibility and cost-benefit in implementing the safety objectives of the regulation.

The new 10 CFR 50, Appendix J, Option B regulation states that licensees may adopt Option B by notifying the NRC of their desire to implement, and submitting a request for Technical Specification revisions. Implementation must await NRC review and approval. 10 CFR 50, Appendix J, Option B, section V, paragraph B.3 states that NRC Regulatory Guide 1.163 or other implementation document being used by a licensee to develop a performance-based leakage testing program must be included, by general reference, in the facility Technical Specifications. The regulation also states that the Technical Specification revisions must "contain justification, including supporting analyses, if the licensee chooses to deviate from methods approved by the Commission and endorsed in the regulatory guide."

Pennsylvania Power & Light Company requests NRC approval to implement the performance-based leakage testing approach for the Susquehanna Steam Electric Station, Units 1 and 2. PP&L intends to implement this approach in accordance with NRC Regulatory Guide 1.163, Revision 0 dated September 1995, "Performance-Based Containment Leak-Test Program" and Nuclear Energy Institute (NEI) 94-01, Revision 0, dated July 26, 1995, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50 Appendix J". PP&L takes no deviations from methods approved by the Commission and endorsed in the regulatory guide.

DESCRIPTION OF CHANGE

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In order to implement 10 CFR 50, Appendix J, Option B per the approved guidance, Susquehanna Units 1 and 2 Technical Specifications will be changed to establish and reference a Primary Containment Leakage Rate Testing Program. The program will be established,

implemented, and maintained in the Administrative Controls portion of the Technical Specifications under Specification 6.8, Procedures and Programs. A new Specification 6.8.5, Primary Containment Leakage Rate Testing Program, is being established under this change. This Specification commits that the Primary Containment Leakage Rate Testing Program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program", dated September 1995. This Specification also includes the definition of P_a and L_a for Susquehanna SES and specifies the Leak Rate Acceptance Criteria for Type A, B, and C tests and air locks.

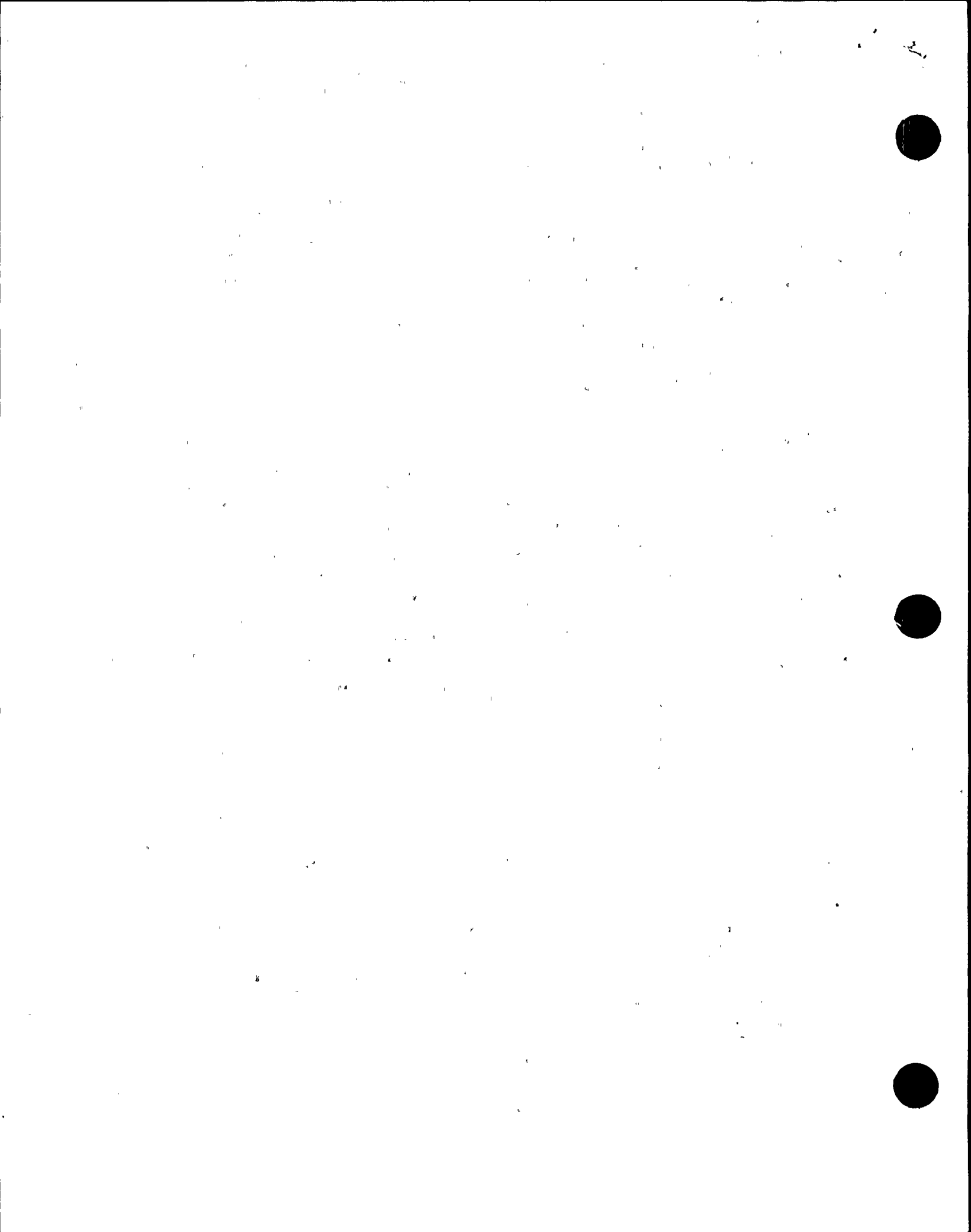
A mark-up of each unit's Technical Specification sections affected by the proposed changes is included as an attachment to this analysis.

ASSESSMENT

The Code of Federal Regulations 10 CFR 50, Appendix J establishes requirements for containment leakage tests for all operating licensees for water-cooled power reactors. Three tests are specified in the regulation; Type A (integrated leakage), Type B (penetration local leakage), and Type C (CIV local leakage). The NRC recently revised the regulations under 10 CFR 50, Appendix J to establish an alternate set of performance-based requirements under Option B. This performance-based leakage testing approach allows Type A, B, and C test intervals to be based on system and component testing performance, thereby providing greater flexibility and cost-benefit in implementing the safety objectives of the regulation. PP&L is seeking to adopt the Option B requirements and amend the Susquehanna SES Technical Specifications as necessary to implement Option B. The following analysis provides the basis for the proposed Technical Specification changes.

Safety Analysis:

The effect of increasing containment leakage rate testing intervals has been evaluated by the Nuclear Energy Institute using the methodology described in NUREG-1493 and historical representative industry leakage rate testing data. The results of this evaluation, as published in NEI 94-01, Revision 0, are that the increased safety risk corresponding to the extended test intervals is small (less than 0.1 percent of total risk) and compares well to the guidance of the NRC's safety goal. In addition, as demonstrated by risk analyses contained in NUREG-1482, relaxation of the integrated leak rate test frequency does not significantly increase the probability or consequences of a previously evaluated accident. Integrated leakage rate tests have been demonstrated to be of limited value in detecting significant leakages from penetrations and isolation valves. The primary containment leak rate data and component performance history at Susquehanna SES are consistent with the conclusions reached in NUREG-1493 and NEI 94-01. Therefore, the proposed license amendments adopting a performance-based approach for verification of leakage rates for isolation valves, containment penetrations, and the containment overall will continue to meet the regulatory goal of providing an essentially leak-tight containment boundary, and will provide an equivalent level of safety as the current requirements.



The revised Technical Specifications will continue to maintain the allowable leak rate (L_a) as the Type A test performance criterion. In addition, a requirement to perform a periodic general visual inspection of the containment is part of the performance-based leakage testing program.

The revised Technical Specifications will continue to maintain the allowable leak rate (L_a) as the Type B and C tests' performance criterion. As supported by the findings of NUREG-1493, the percentage of leakages detected only by integrated leak rate tests is small (only a few percent) and Type B and C leakage tests are capable of detecting more than 97 percent of containment leakages and virtually all such leakages are identified by local leak rate tests (LLRTs) of containment isolation valves.

Therefore, implementing the 10 CFR 50 Appendix J Option B requirements for performance-based leakage testing at Susquehanna SES does not impact plant safety margins.

NO SIGNIFICANT HAZARDS CONSIDERATIONS

This analysis addresses proposed changes to Susquehanna SES Technical Specifications to implement the performance-based leakage testing approach established in 10 CFR 50, Appendix J, Option B in accordance with NRC Regulatory Guide 1.163, Revision 0 dated September 1995, "Performance-Based Containment Leak-Test Program" and Nuclear Energy Institute (NEI) 94-01, Revision 0, dated July 26, 1995, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50 Appendix J". PP&L takes no deviations from methods approved by the Commission and endorsed in the regulatory guide.

I. This proposal does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed license amendments do not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed license amendments revise the Technical Specifications to reflect the adoption of a performance-based containment leakage-testing program. The Nuclear Regulatory Commission has approved the use of a performance-based option for containment leakage testing programs when it amended 10 CFR Part 50, Appendix J (60 FR 49495).

To adopt of the revised regulations, licensees are required to incorporate into their Technical Specifications, by general reference, the NRC regulatory guide or other plant specific implementing document. A new Administrative Controls Specification is being added to the Susquehanna SES Technical Specifications that requires the establishment and maintenance of a Primary Containment Leakage Rate Testing Program. As stated in the Technical Specification, this Primary Containment Leakage Rate Testing Program will conform with NRC Regulatory Guide 1.163, "Performance-Based Containment Leak-Rate Testing Program", dated September 1995. The Primary Containment Leakage Rate Testing Program establishes requirements intended to ensure on-going containment

integrity, including the performance of a periodic general visual inspection of the containment to detect early indications of structural deterioration.

The effect of increasing containment leakage rate testing intervals has been evaluated by the Nuclear Energy Institute using the methodology described in NUREG-1493 and historical representative industry leakage rate testing data. The results of this evaluation, as published in NEI 94-01, Revision 0, are that the increased risk corresponding to the extended test interval is small (less than 0.1 percent of total risk) and compares well to the guidance of the NRC's safety goal. The primary containment leak rate data and component performance history at Susquehanna SES are consistent with the conclusions reached in NUREG-1493 and NEI 94-01. Therefore, adoption of performance-based verification of leakage rates for isolation valves, containment penetrations, and the overall containment boundary will provide an equivalent level of safety and does not involve a significant increase in the probability or consequences of an accident previously evaluated.

II. *This proposal does not create the possibility of a new or different kind of accident from any accident previously evaluated.*

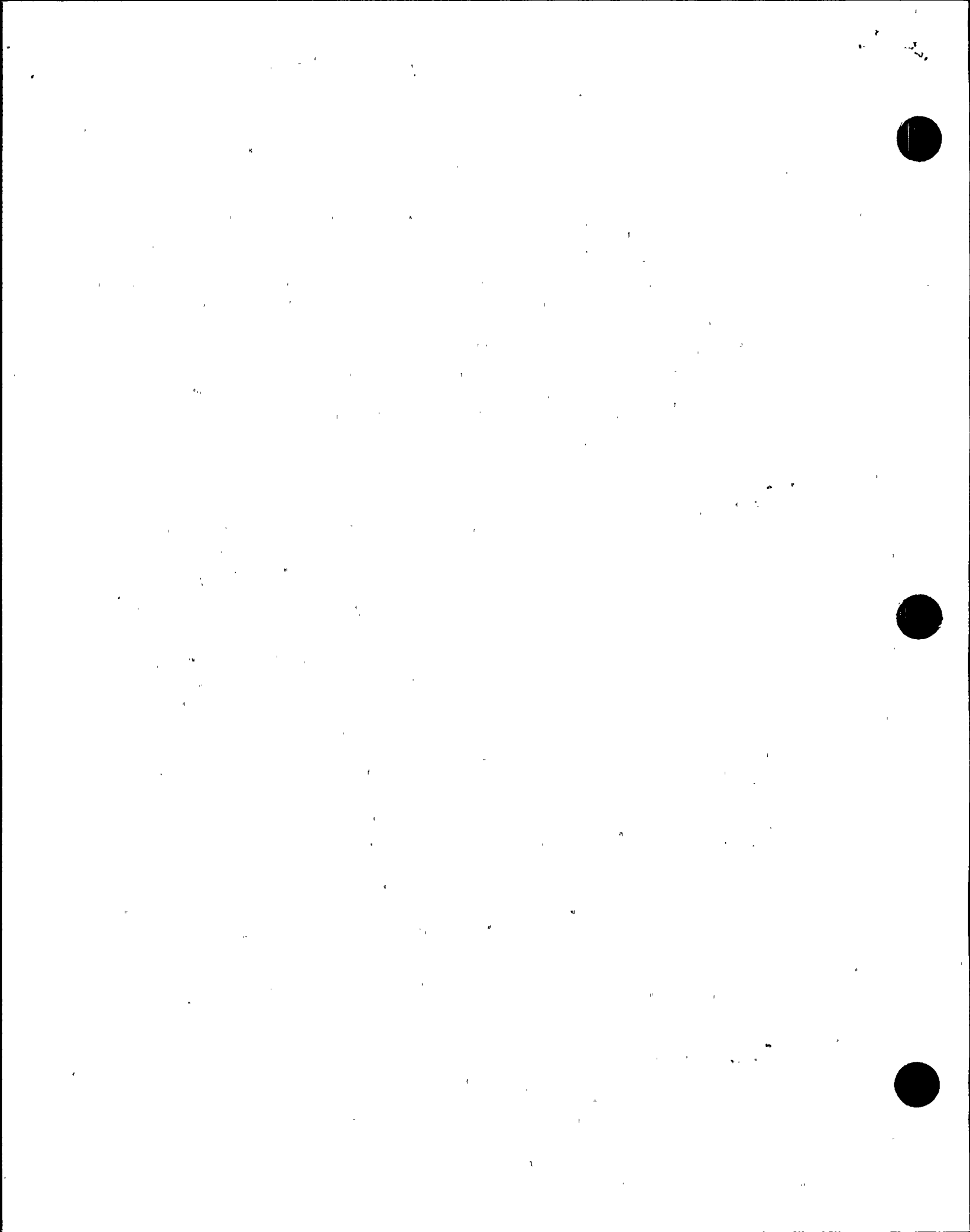
No safety-related equipment, safety function, or plant operations will be altered as a result of the proposed license amendment.

The safety objective for the primary containment is stated in 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants." The safety function of the primary containment will be met since the containment will continue to provide "an essentially leak tight barrier against the uncontrolled release of radioactivity to the environment..." for postulated accidents. Therefore, the proposed license amendments will not create the possibility of a new or different kind of accident from any accident previously evaluated.

III. *This change does not involve a significant reduction in a margin of safety.*

As stated above, the Nuclear Regulatory Commission has approved the use of a performance-based option for containment leakage testing programs when it amended 10 CFR Part 50, Appendix J (60 FR 49495). The new Primary Containment Leakage Rate Testing Program will conform with NRC Regulatory Guide 1.163, Revision 0, dated September 1995, "Performance-Based Containment Leak-Rate Testing Program" by requiring that leakage testing intervals be established based on the criteria in Section 11.0 of NEI 94-01, Revision 0.

As discussed in Part 1 above, the effect of increasing containment leakage rate testing intervals has been evaluated by the Nuclear Energy Institute using the methodology described in NUREG-1493 and historical representative industry leakage rate testing data. The results of this evaluation, as published in NEI 94-01, Revision 0, are that the



increased safety risk corresponding to the extended test intervals is small (less than 0.1 percent of total risk) and compares well to the guidance of the NRC's safety goal. In addition, as demonstrated by risk analyses contained in NUREG-1482, relaxation of the integrated leak rate test frequency does not significantly increase the probability or consequences of a previously evaluated accident. Integrated leakage rate tests have been demonstrated to be of limited value in detecting significant leakages from penetrations and isolation valves. The primary containment leak rate data and component performance history at Susquehanna SES are consistent with the conclusions reached in NUREG-1493 and NEI 94-01. Therefore, the proposed license amendments adopting a performance-based approach for verification of leakage rates for isolation valves, containment penetrations, and the containment overall will continue to meet the regulatory goal of providing an essentially leak-tight containment boundary, will provide an equivalent level of safety, and do not involve a significant reduction in a margin of safety.

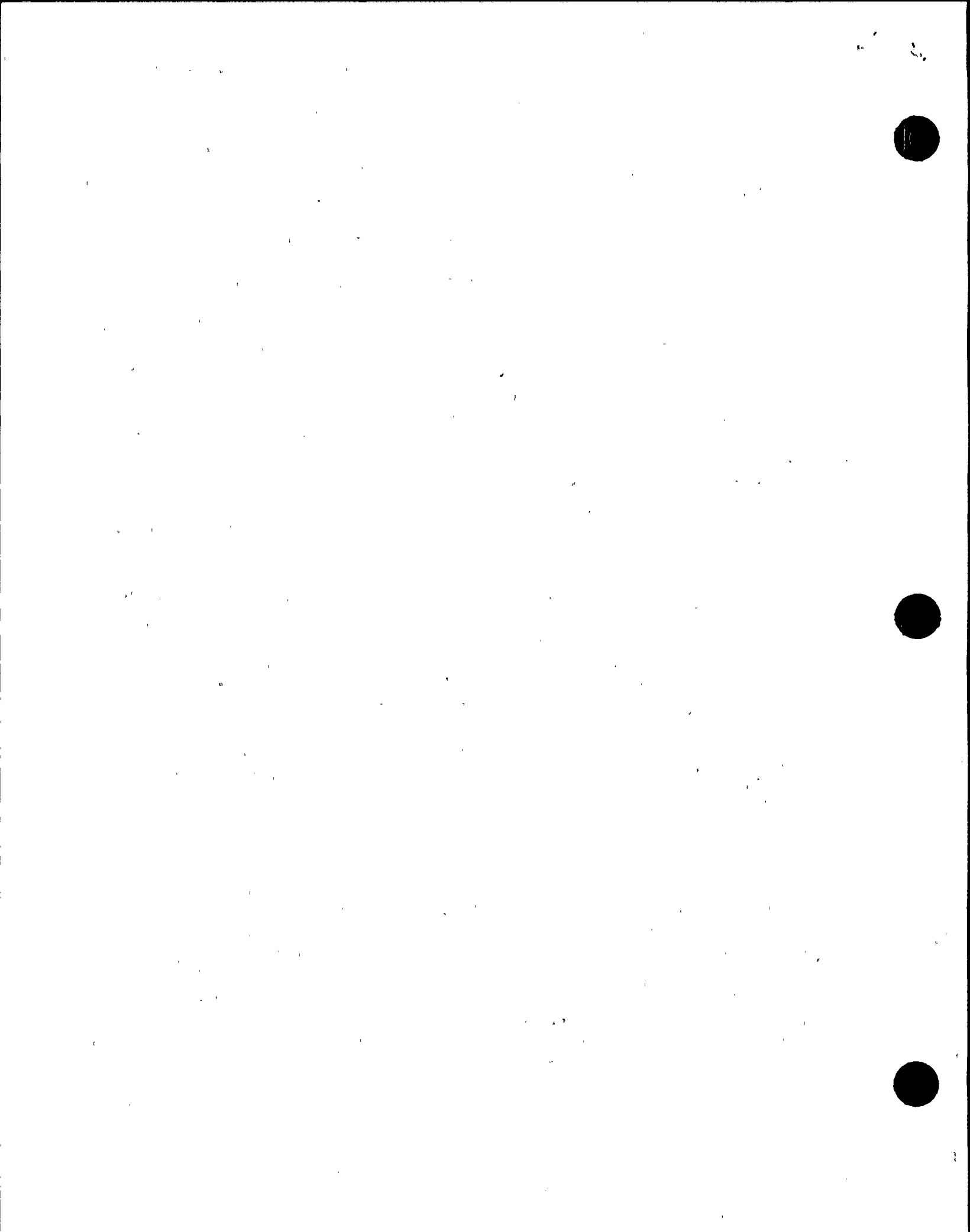
The revised Technical Specifications will continue to maintain the allowable leak rate (L_a) as the Type A test performance criterion. In addition, a requirement to perform a periodic general visual inspection of the containment is part of the performance-based leakage testing program.

The revised Technical Specifications will continue to maintain the allowable leak rate (L_a) as the Type B and C tests' performance criterion. As supported by the findings of NUREG-1493, the percentage of leakages detected only by integrated leak rate tests is small (only a few percent) and Type B and C leakage tests are capable of detecting more than 97 percent of containment leakages and virtually all such leakages are identified by local leak rate tests (LLRTs) of containment isolation valves.

Thus, the proposed license amendments do not involve a significant reduction in a margin of safety and will continue to support the regulatory goal of ensuring an essentially leak-tight containment boundary.

ENVIRONMENTAL CONSEQUENCES

An environmental assessment is not required for the proposed change because the requested change conforms to the criteria for actions eligible for categorical exclusion as specified in 10 CFR 51.22(c)(9). The requested change will have no impact on the environment. The proposed change does not involve a significant hazards consideration as discussed in the preceding section. The proposed change does not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. In addition, the proposed change does not involve a significant increase in individual or cumulative occupational radiation exposure. The basis for this determination follows.



D The proposed license amendments do not result in a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite. The proposed license amendments do not introduce any new containment boundary changes nor do these proposed license amendments require any existing containment boundary systems to perform a different type of function than they are presently designed to perform. The proposed license amendments do not alter the function of existing containment boundary equipment and will ensure that the consequences of any previously evaluated accident do not increase. Therefore, PP&L has concluded that there will not be a significant increase in the types or amounts of any effluent that may be released offsite and, as such, does not involve irreversible environmental consequences beyond those already associated with normal operation.

These amendments do not result in an increase in individual or cumulative occupational radiation exposure. Implementation of a performance-based containment leakage rate testing approach will allow test intervals to be based on system and component performance. Therefore, the increased test intervals that are permitted under a performance-based leakage testing program are actually expected to decrease cumulative occupational exposure.

IMPLEMENTATION

D It is requested that this change be approved as soon as possible but no later than May 15, 1996, with implementation within 30 days of the date of issuance.