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OCT 16 2001

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station OP1-17
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
SUPPLEMENT NO. 2 TO PROPOSED AMENDMENT NO. 241
TO LICENSE NPF-14 AND PROPOSED
AMENDMENT NO. 206 TO LICENSE NPF-22:
REQUEST FOR A ONE TIME DEFERRAL OF THE
TYPE A CONTAINMENT INTEGRATED LEAK
RATE TEST (ILRT)
PLA-5380

Docket No. 50-387
and 50-388

Reference: 1. *PLA-5342, G. T. Jones (PPL) to USNRC Document Control Desk, "Proposed Amendment No. 241 to License NPF-14 and Proposed Amendment No. 206 to License NPF-22: Request for a One Time Deferral of the Type A Containment Integrated Leak Rate Test (ILRT)," dated July 30, 2001.*

2. *Letter, NRC to M. Kansler (Entergy Nuclear Operations, Inc.), "Indian Point Nuclear Generating Unit No. 3 - Issuance of Amendment RE: Frequency of Performance - Based Leakage Rate Testing," dated April 17, 2001.*

3. *PLA-5361, R. G. Byram (PPL) to USNRC Document Control Desk, "Supplement to Proposed Amendment No 241 to License NPF-14 and Proposed Amendment No. 206 to License NPR-22: Request for a One Time Deferral fo the Type A Containment Integrated Leak Rate Test (ILRT)," dated September 7, 2001.*

4. *Letter, NRC to R. G. Byram (PPL), "Susquehanna Steam Electric Station, Units 1 and 2 - Request for Additional Information Re: Deferral of Containment Integrated Leak Rate Testing (TAC Nos. MB2894 and MB2695), dated October 5, 2001.*

This letter provides supplemental information necessary for the NRC staff to complete its review of the proposed license amendments. Reference 3 also provided supplemental information to the NRC on September 7, 2001.

A017

Attachment 1 to this letter contains responses to the NRC Request for Additional Information (Reference 4). Attachment 2 to this letter contains a markup of Unit 1 and Unit 2 Technical Specification Section 5.5.12, revised from the markup submitted in Reference 1 to be consistent with the wording previously approved by the NRC in Reference 2. Attachment 3 to this letter is the "Camera Ready" version of the revised Technical Specification pages. These "markup" and "Camera Ready" versions of the affected Technical Specification pages replace those provided in Reference 1.

Attachment 4 to this letter is a revision to the No Significant Hazards Considerations (NSHC) Evaluation originally provided by Reference 1. This change only affects the proposed wording for the Technical Specification revision stated in the introductory paragraphs of the NSHC. There is no effect on the final determination that this revision to the proposed amendment does not:

- Involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated;
- Create the possibility of a new or different kind of accident from any previously analyzed; or
- Involve a significant reduction in a margin of safety.

We trust that this information is sufficient for NRC to complete its review by November 1, 2001. If you have any questions, please contact Mr. D. L. Filchner at (610) 774-7819.

Sincerely,

R. G. Byram

Attachment

copy: NRC Region I
Mr. S. L. Hansell, NRC Sr. Resident Inspector
Mr. R. G. Schaaf, NRC Project Manager

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of :

PPL Susquehanna, LLC: Docket No. 50-387

SUPPLEMENT NO. 2 TO PROPOSED AMENDMENT NO. 241 TO LICENSE NPF-14: ONE TIME DEFERRAL OF THE CONTAINMENT INTEGRATED LEAK RATE TEST (ILRT) UNIT NO. 1

Licensee, PPL Susquehanna, LLC, hereby files supplement No. 2 to Proposed Amendment No. 241 in support of a revision to its Facility Operating License No. NPF-14 dated July 17, 1982.

This amendment involves a revision to the Susquehanna SES Unit 1 Technical Specifications.

PPL Susquehanna, LLC
By:

R. G. Byram
Sr. Vice-President and Chief Nuclear Officer

Sworn to and subscribed before me
this 16th day of October, 2001.

Notary Public

Notarial Seal
Nancy J. Lannen, Notary Public
Allentown, Lehigh County
My Commission Expires June 14, 2004

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of :

PPL Susquehanna, LLC : Docket No. 50-388

SUPPLEMENT NO.2 TO PROPOSED AMENDMENT NO. 206 TO LICENSE NPF-22: ONE TIME DEFERRAL OF THE CONTAINMENT INTEGRATED LEAK RATE TEST (ILRT) UNIT NO. 2

Licensee, PPL Susquehanna, LLC, hereby files supplement No. 2 to Proposed Amendment No. 206 in support of a revision to its Facility Operating License No. NPF-22 dated March 23, 1984.

This amendment involves a revision to the Susquehanna SES Unit 2 Technical Specifications.

PPL Susquehanna, LLC
By:

R. G. Byram
Sr. Vice-President and Chief Nuclear Officer

Sworn to and subscribed before me
this 16th day of October, 2001.

Notary Public

Notarial Seal
Nancy J. Lannen, Notary Public
Allentown, Lehigh County
My Commission Expires June 14, 2004

Attachment 1 to PLA-5380

Responses to Request for Additional Information (Reference 4)

NRC Question 1:

Please provide a description of the ISI that provides assurance that in the absence of an ILRT for 15 years, the containment structural and leak-tight integrity will be maintained. Please provide the specific year of the Edition and Addenda of the ASME Code used for containment ISI and the start date of the first 120-month containment ISI interval (and subsequent containment ISI intervals).

PPL Answer:

ISI Inspections are implemented through the PPL ISI Primary Containment Inservice Inspection Program. The scope of this program is limited to that portion of the Inservice Inspection Program which addresses Class MC and CC components, including all associated areas and items as required by ASME Section XI 1992 edition with the 1992 addenda of Section XI of the ASME Boiler and Pressure Vessel Code, within the limitations and modifications required by the code of Federal Regulations in 10 CFR 50.55a. In general, the areas and items subject to inspection include the accessible pressure retaining containment surface areas, both class MC and CC, including structural attachments and penetrations, seals, gaskets, moisture barriers, pressure retaining bolting, and Class MC supports. Exceptions taken to the ASME Section XI requirements have been documented and approved by the NRC as a request for relief.

The start date of the 120-month interval for SSES Unit 1 is March 2000 and the start date of the 120-month interval for SSES Unit 2 is March 1999. Both units of SSES are on 2-year fuel cycles, so the subsequent intervals are exactly 120 months.

NRC Question 2:

Subsubarticle IWE-1240 of Subsection IWE of Section XI of the ASME Boiler and Pressure Vessel Code requires you to identify the surface areas requiring augmented examinations. Please provide the locations of the containment liner surfaces which PPL has identified as requiring augmented examination, and a summary of findings of the examinations performed.

PPL Answer:

Presently, no areas of the containment liner surfaces require augmented examination per Subsubarticle IWE-1240 of Subsection IWE of Section XI of the ASME Boiler and Pressure Vessel Code.

NRC Question 3:

For the examination of seals and gaskets, and testing of bolts associated with the primary containment pressure boundary (Examination Categories E-D, and E-G), PPL had requested relief from the requirements of the Code. As an alternative, PPL proposed to examine these components during the leak-rate testing of the primary containment. With the flexibility provided in Option B of Appendix J for Type B and Type C testing (as per NEI 94-01 and RG 1.163), and the extension requested in this amendment for Type A testing, please provide your examination schedule for the examination and testing of seals, gaskets, and bolts associated with the containment pressure boundary.

PPL Answer:

SSES scheduling rules as allowed by Option B of Appendix J of 10 CFR 50 are as follows:

The initial test frequency for performing a leak test on seals, gaskets and bolts which are Type B components is at least once every 30 months. If 2 consecutive as-found Type B tests are less than their administrative limit, the test interval is extended to 60 months. If 3 consecutive as-found Type B tests are less than their administrative limit, the test interval is extended to 120 months. If a test result is greater than the administrative limit for the components, the component is restored to a leak rate below the administrative limit and the test interval is re-established at 30 months.

Regardless of the above schedule, any repair or disassembly of a component with a seal, gasket, or bolted connection requires a post–maintenance Appendix J Type B test.

In addition, SSES does not rely solely on Type A testing for any seal, gasket, or bolted connection.

NRC Question 4:

The stainless steel bellows have been found to be susceptible to trans-granular stress corrosion cracking, and the leakages through them are not readily detectable by Type B testing (see Nuclear Regulatory Commission Information Notice 92-20, "Inadequate Local Leak Rate Testing," March 3, 1992). If applicable, please provide information regarding inspection and testing of the bellows at SSES 1 and 2, and how the potential bellows degradation has been factored into PPL's risk assessment.

PPL Answer:

SSES review of NRC IN 92-20 determined that SSES does not have bellows as described in the notice. SSES determined that testable flange O-rings warrant a similar testing strategy that is incorporated into our Appendix J testing program.

NRC Question 5:

Inspections of some reinforced and steel containments have indicated degradation from the uninspectable (embedded) side of the steel liner of primary containments. These degradations cannot be found by VT-3 or VT-1 examinations unless they are through the thickness of the liner or 100% of the uninspectable surfaces are periodically examined by volumetric examination methods. Please describe how the potential leakages due to age-related degradation mechanisms described above are factored into the risk-informed assessment related to the extension of the ILRT.

PPL Answer:

SSES has a Mark II containment. The interior of the drywell, the drywell floor, and the suppression chamber are lined with a ¼" steel liner that serves as a leaktight membrane to prevent leakage out of the structure. The liner sections are completely welded together and anchored into the concrete. There is no air space between the liner and the concrete structure. Therefore, water cannot leak from the refuel cavity seal between the liner and concrete surface like the mechanism that caused degradation at another containment.

To assess potential steel liner degradation by an unidentified mechanism, the probability and consequence for leakage is explicitly included in the risk assessment. EPRI Containment Failure Class 1 and Class 3 include leakage rates that are independent of the source of the leak. Class 1 is for an intact containment. The Class 3 leakage path is through part of the containment that is not Type B or Type C tested. We assumed twice the Technical Specification allowed leakage (2 La) for the leakage rate for the 10 year and 15 year test interval in the risk analysis for Class 1. Therefore, Class 1 risk analysis includes an allowance for increased leakage that includes all penetrations and the liner. Class 3 is divided into small leakage rates (10 La) and large leakage rates (35 La). Therefore, Class 3 risk analysis includes the entire liner. However, based on the risk analysis, the probability of a liner failure increases by 4.5% due to extending the ILRT test interval from 10 years to 15 years, but the total increased risk to the public is not significant (0.3%).

Attachment 2 to PLA-5380

Revised Technical Specification Markups

(Units 1 & 2)

5.5 Programs and Manuals

5.5.11 Safety Function Determination Program (SFDP) (continued)

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.12 Primary Containment Leakage Rate Testing Program

A program shall be established, implemented, and maintained to comply with the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program", dated September 1995, as modified by the following exception:

The peak calculated containment internal pressure for the design basis loss of coolant accident, Pa, is 45.0 psig.

The maximum allowable primary containment leakage rate, La, at Pa, shall be 1% of the primary containment air weight per day.

Leakage Rate Acceptance Criteria are:

a. Primary Containment leakage rate acceptance criterion is ≤ 1.0 La. During each unit startup following testing in accordance with this program, the leakage rate acceptance criteria are ≤ 0.60 La for Type B and Type C tests and ≤ 0.75 La for Type A tests;

b. Air lock testing acceptance criteria are:

   1) Overall air lock leakage rate is ≤ 0.05 La when tested at ≥ Pa,

   2) For each door, leakage rate is ≤ 5 scfh when pressurized to ≥ 10 psig.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Primary Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.

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a. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the May 4, 1992 Type A test shall be performed no later than May 3, 2007.

5.5 Programs and Manuals

5.5.11 Safety Function Determination Program (SFDP) (continued)

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.12 Primary Containment Leakage Rate Testing Program

A program shall be established, implemented, and maintained to comply with the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program", dated September 1995, as modified by the following exceptions:

The peak calculated containment internal pressure for the design basis loss of coolant accident, Pa, is 45.0 psig.

The maximum allowable primary containment leakage rate, La, at Pa, shall be 1% of the primary containment air weight per day.

Leakage Rate Acceptance Criteria are:

a. Primary Containment leakage rate acceptance criterion is ≤ 1.0 La. During each unit startup following testing in accordance with this program, the leakage rate acceptance criteria are ≤ 0.60 La for Type B and Type C tests and ≤ 0.75 La for Type A tests;

b. Air lock testing acceptance criteria are:

   1) Overall air lock leakage rate is ≤ 0.05 La when tested at ≥ Pa.

   2) For each door, leakage rate is ≤ 5 scfh when pressurized to ≥ 10 psig.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Primary Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.

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a. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the October 31, 1992 Type A test shall be performed no later than October 30, 2007.

Attachment 3 to PLA-5380

"Camera Ready" Technical Specifications

(Units 1 & 2)

5.5 Programs and Manuals

5.5.11 Safety Function Determination Program (SFDP) (continued)

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.12 Primary Containment Leakage Rate Testing Program

A program shall be established, implemented, and maintained to comply with the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program", dated September 1995, as modified by the following exception:

a. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the May 4,1992 Type A test shall be performed no later than May 3, 2007.

The peak calculated containment internal pressure for the design basis loss of coolant accident, Pa, is 45.0 psig.

The maximum allowable primary containment leakage rate, La, at Pa, shall be 1% of the primary containment air weight per day.

Leakage Rate Acceptance Criteria are:

a. Primary Containment leakage rate acceptance criterion is $\leq$ 1.0 La. During each unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq$ 0.60 La for Type B and Type C tests and $\leq$ 0.75 La for Type A tests:

b. Air lock testing acceptance criteria are:

   1) Overall air lock leakage rate is $\leq$ 0.05 La when tested at $\geq$ Pa.

   2) For each door, leakage rate is $\leq$ 5 scfh when pressurized to $\geq$ 10 psig.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Primary Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.

5.5 Programs and Manuals

5.5.11 Safety Function Determination Program (SFDP) (continued)

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.12 Primary Containment Leakage Rate Testing Program

A program shall be established, implemented, and maintained to comply with the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program", dated September 1995, as modified by the following exception:

a. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the October 31,1992 Type A test shall be performed no later than October 30, 2007.

The peak calculated containment internal pressure for the design basis loss of coolant accident, Pa, is 45.0 psig.

The maximum allowable primary containment leakage rate, La, at Pa, shall be 1% of the primary containment air weight per day.

Leakage Rate Acceptance Criteria are:

a. Primary Containment leakage rate acceptance criterion is $\leq$ 1.0 La. During each unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq$ 0.60 La for Type B and Type C tests and $\leq$ 0.75 La for Type A tests;

b. Air lock testing acceptance criteria are:

   1) Overall air lock leakage rate is $\leq$ 0.05 La when tested at $\geq$ Pa,

   2) For each door, leakage rate is $\leq$ 5 scfh when pressurized to $\geq$ 10 psig.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Primary Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.

Attachment 4 to PLA-5380

Revised No Significant Hazards Considerations Evaluation

(Units 1 & 2)

NO SIGNIFICANT HAZARDS CONSIDERATION EVALUATION (REVISED)

PPL Susquehanna, LLC has evaluated the proposed amendment and determined that it involves no significant hazards consideration. According to 10CFR50.92 (c) a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility with the proposed amendment would not:

- Involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated;
- Create the possibility of a new or different kind of accident from any previously analyzed; or
- Involve a significant reduction in a margin of safety.

PPL Susquehanna, LLC proposes to:

Revise SSES Unit 1 Technical Specifications (TS) 5.5.12, Containment Leakage Rate Testing Program," by revising the end of the first paragraph and adding Section a. as follows:

... September 1995, as modified by the following exception:

a. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the May 4, 1992 Type A test shall be performed no later than May 3, 2007.

Revise SSES Unit 2 Technical Specifications (TS) 5.5.12, Containment Leakage Rate Testing Program," by revising the end of the first paragraph and adding Section a. as follows:

... September 1995, as modified by the following exception:

a. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the October 31, 1992 Type A test shall be performed no later than October 30, 2007.

The determination that the criteria set forth in 10CFR50.92 are met for this amendment as indicated below:

1. Does the proposed change involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated?

   The frequency of Type A testing does not change the probability of an event that results in core damage or vessel failure. Primary containment is the engineered feature that contains the energy and fission products from evaluated events. The SSES IPE documents events that lead to containment failure. The frequency of events that lead to containment failure does not change because it is not a function of the Type A test interval. Containment failure is a function of loss of safety systems that shutdown the reactor, provide adequate core cooling, provide decay heat removal, and drywell sprays.

   The consequences of the evaluated accidents are the amount of radioactivity that is released to secondary containment and subsequently to the public. Normally, extending a test interval increases the probability that a Structure System or Component will be failed. However, NUREG-1493, Performance-Based Containment Leak-Test Program, states that calculated risks in BWR's is very insensitive to the assumed leakage rates. The remaining testing and inspection programs provide the same coverage as the Type A test. These other programs will maintain containment leakage low. Any leakage path problems will be identified and repairs will be made. Additionally the containment is continuously monitored during power operation. Anomalies are investigated and resolved. Thus there is a high confidence that containment integrity will be maintained independent of the Type A test frequency.

   Therefore, this proposed amendment does not involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any previously analyzed?

   Primary containment is designed to contain energy and fission products during and after an event. The SSES IPE identifies events that lead to containment failure. Revision to the Type A test interval does not change this list of events. There are no physical changes being made to the plant and there are no changes to the operation of the plant that could introduce a new failure mode creating an accident or affecting mitigation of an accident.

   Therefore, this proposed amendment does not involve a possibility of a new or different kind of accident from any previously analyzed.

3. Does the proposed change involve a significant reduction in a margin of safety?

   The proposed revision to Technical Specifications adds a one time extension to the current interval for Type A testing. The current level of 10 years, based on past performance, would be extended on a one time basis to 15 years from the last Type A test. The NUREG-1493 generic study of the effects of extending containment leakage testing found that a 20-year interval in Type A leakage testing resulted in an imperceptible increase in risk to the public. NUREG-1493 found that, generically, the design containment leakage rate contributes about 0.1% to the individual risk and that increasing the Type A test interval would have minimal affect on this risk since 95% of the potential leakage paths are detected by Type B and Type C testing. Technical Specifications require that maximum allowable primary containment leakage rate is less than 1% primary containment air weight per day. During unit startup following Type B and Type C testing, leakage rate acceptance criteria must be less than 0.6% primary containment air weight per day. (TS 5.5.12) Therefore, Type B and Type C testing combined with visual inspection programs will maintain containment leakage low.

   Therefore, these changes do not involve a significant reduction in margin of safety.

Based upon the above, the proposed amendment does not involve a significant hazards consideration.