

10 CFR 50.12

RS-04-086

July 1, 2004

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Subject: Request for Exemption from 10 CFR 50 Appendix J in Support of Request for License Amendment Related to Application of the Alternative Source Term

- References:**
- (1) Letter from Michael J. Pacilio (AmerGen Energy Company, LLC) to U. S. NRC, "Request for License Amendment Related to Application of Alternative Source Term," dated April 3, 2003
 - (2) Letter from U. S. NRC to John L. Skolds (AmerGen Energy Company, LLC), "Clinton Power Station, Unit 1 – Corrected Request for Additional Information Regarding Alternate Source Term Submittal (TAC No. MB8365)," dated November 18, 2003
 - (3) Letter from Keith R. Jury (Exelon Generation Company, LLC) to U. S. NRC, "Additional Information Supporting the Request for License Amendment Related to Application of the Alternative Source Term," dated December 23, 2003

In accordance with 10 CFR 50.12, "Specific exemptions," paragraph (a)(2)(ii), AmerGen Energy Company, LLC (AmerGen) is requesting NRC approval of a permanent exemption from 10 CFR 50, Appendix J, Option B, "Performance-Based Requirements," paragraph III.B, which requires demonstration "that the sum of the leakage rates at accident pressure of Type B tests, and pathway leakage rates from Type C tests, is less than the performance criterion (La) with margin, as specified in the Technical Specifications." With respect to this requirement, AmerGen requests an exemption to exclude the leakage rates for the containment purge lines associated with containment penetrations 1MC-101 and 1MC-102. The details of the exemption request are attached.

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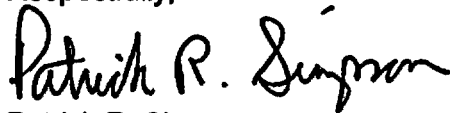
In Reference 1, AmerGen requested a change to the Technical Specifications (TS) for Facility Operating License No. NPF-62 for Clinton Power Station (CPS). Specifically, the proposed change supported application of an alternative source term (AST) methodology in accordance with 10 CFR 50.67, "Accident source term," with the exception that Technical Information Document (TID) 14844, "Calculation of Distance Factors for Power and Test Reactor Sites," will continue to be used as the radiation dose basis for equipment qualification.

In Reference 2, AmerGen received a request for additional information from the NRC. The initial response to this request was provided in Reference 3. Question 2 of Reference 2 requested an explanation of how the proposed change to the CPS TS will meet the 10 CFR 50, Appendix J, requirements for summing the leakage from all pathways subject to testing. As noted in the Attachment to Reference 3, it has been determined that the proposed change constitutes an exception to this requirement and an exemption is required to allow separate evaluation of the leakage of the containment purge penetrations. This letter provides the required exemption request discussed in Reference 3.

AmerGen requests approval of the subject exemption request consistent with the schedule for review of the Reference 1 amendment request.

If you should have any questions concerning this submittal, please contact Mr. Timothy A. Byam at (630) 657-2804.

Respectfully,



Patrick R. Simpson
Manager - Licensing

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cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Clinton Power Station
Office of Nuclear Facility Safety – IEMA Division of Nuclear Safety

ATTACHMENT
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I. SPECIFIC EXEMPTION REQUEST

In accordance with 10 CFR 50.12, "Specific exemptions," paragraphs (a)(1) and (a)(2)(ii), AmerGen Energy Company (AmerGen), LLC, is requesting NRC approval of a permanent exemption from 10 CFR 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," Option B, "Performance-Based Requirements," paragraph III.B, which requires demonstration "that the sum of the leakage rates at accident pressure of Type B tests, and pathway leakage rates from Type C tests, is less than the performance criterion (La) with margin, as specified in the Technical Specifications." Specifically with respect to this requirement, AmerGen requests a permanent exemption to exclude the leakage rates for the containment purge lines associated with Clinton Power Station (CPS) containment penetrations 1MC-101 and 1MC-102 from the secondary containment bypass leakage total and the primary containment leakage rate total.

II. BASIS FOR EXEMPTION REQUEST

The criteria for granting specific exemptions from 10 CFR 50 regulations are stated in 10 CFR 50.12. In accordance with 10 CFR 50.12(a)(1), the NRC is authorized to grant an exemption upon determining that the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Furthermore, as stated in 10 CFR 50.12(a)(2), special circumstances must exist for the NRC to consider granting an exemption. According to 10 CFR 50.12(a)(2)(ii), special circumstances are present whenever the application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule.

According to 10 CFR 50 Appendix J, the purpose of the leak test requirements is to ensure the following.

- (a) Leakage through the primary reactor containment or systems and components penetrating the containment does not exceed allowable leakage rates specified in the Technical Specifications (TS).
- (b) Integrity of the containment structure is maintained during its service life.

The first purpose of 10 CFR 50 Appendix J is served primarily by the performance of Integrated Leak Rate Tests (ILRTs). Leakage through the subject penetrations would continue to be included in the containment leakage measured during ILRTs following approval of this proposed exemption.

The second purpose of 10 CFR 50 Appendix J is served primarily by the performance of Local Leak Rate Tests (LLRTs). In accordance with 10 CFR 50 Appendix J Option B, paragraph III.B, performance of Type B and Type C containment leakage tests (i.e., LLRTs) are required. The Type B pneumatic tests detect and measure local leakage rates across pressure retaining, leakage-limiting boundaries while Type C pneumatic tests measure containment isolation valve leakage rates. These tests are required to be performed prior to initial criticality and periodically thereafter at intervals based on the safety significance and historical performance of each boundary and isolation valve. The intent of these tests is to ensure the integrity of the overall containment system as a barrier to fission product release to reduce the risk from reactor accidents. 10 CFR 50, Appendix J goes on to require that the tests must demonstrate that the sum of the leakage rates at

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accident pressure of Type B tests, and pathway leakage rates from Type C tests, is less than the performance criterion (i.e., maximum allowable primary containment leakage rate, La) with margin, as specified in the Technical Specifications.

The CPS containment purge lines (i.e., penetrations 1MC-101 and 1MC-102) are currently subject to leakage rate testing under TS Surveillance Requirement (SR) 3.6.1.3.5, with a current leakage rate acceptance criterion of ≤ 0.01 La for each penetration. As part of the Alternative Source Term (AST) analysis, the dose consequences from leakage through the primary containment purge lines have been evaluated based on a leak rate of 0.02 La for each penetration. The AST analysis (Reference 1) demonstrated that the consequences due to a LOCA, including the assumed separate containment purge line leak rate, are within regulatory limits and are therefore acceptable. Therefore, Reference 1 proposes a revised acceptance criterion of ≤ 0.02 La for SR 3.6.1.3.5. Since a separate dose analysis has been performed for the primary containment purge lines, these penetrations no longer need to be considered in determining compliance with the secondary containment bypass leakage path SR 3.6.1.3.8 limit of ≤ 0.08 La, or the primary containment leakage rate acceptance criterion in TS 5.5.13 of ≤ 1.0 La.

The proposed exemption does not change the requirement to perform the ILRT. The leakage through the subject potential leakage paths will continue to be included in the containment leakage measured during the ILRT. CPS will continue to perform Type C leakage testing on 1MC-101 and 1MC-102. The proposed exemption does not change the TS or the required surveillance requirement. CPS will evaluate the measured leakage results against the specified 0.02 La acceptance criterion. This acceptance criterion is a small fraction of the secondary containment bypass and primary containment leakage rate limits. This methodology is consistent with that of the CPS main steam line penetration leakage, which is also evaluated separately from the overall La calculation by virtue of having a separate dose analysis and separate TS surveillance criteria. This exemption was found to be acceptable in Section 6.2.6 of Reference 2 and is documented in CPS Updated Safety Analysis Report (USAR) Table 6.2-1. The containment purge penetrations will continue to be leak tested in accordance with a separate TS SR and will be evaluated against specified acceptance criteria based on analysis and therefore, application of the regulation in this case is not necessary to achieve the underlying purpose of the rule. Therefore, it has been demonstrated that the criteria of 10 CFR 50.12(a)(2)(ii) are satisfied.

The criteria of 10 CFR 50.12(a)(1) have been satisfied. The requested exemption is authorized by law in that no law precludes the activities covered by this exemption request. In addition, the requested exemption will not present an undue risk to the public health and safety and is consistent with the common defense and security.

III. ENVIRONMENTAL ASSESSMENT

In accordance with 10 CFR 51.30, "Environmental assessment," and 51.32, "Finding of no significant impact," the following information is provided in support of an environmental assessment and finding of no significant impact for the proposed change.

A permanent exemption is requested to exclude the leakage rates for the containment purge lines associated with Clinton Power Station (CPS) containment penetrations 1MC-101 and 1MC-102 from the secondary containment bypass leakage total and the primary containment leakage rate total. The alternative measures described above for measuring and evaluating containment purge line leakage, will provide assurance that the primary

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reactor containment is an essentially leak tight barrier against the uncontrolled release of radioactivity to the environment. CPS will continue to measure the leakage through the subject penetrations in accordance with TS SR 3.6.1.3.5 and will evaluate the measured leakage results against a specified 0.02 La acceptance criterion. The 0.02 La acceptance criterion is a fraction of the acceptable secondary containment bypass leakage and primary containment leakage limits and will therefore be effective and reliable in determining the status of the leakage through these penetrations as well as verifying that substantial degradation of the valves in these lines has not occurred since the last ILRT.

Based on the above discussion, there is no increase in the probability of higher post accident offsite or onsite doses related to the exemption and therefore, no increase in environmental impact beyond that experienced with no exemption.

IV. CONCLUSION

10 CFR 50.12 authorizes the NRC, upon application by any interested person, to grant exemption from the requirements of the regulations when special circumstances are present. AmerGen concludes that such special circumstances are present in this instance to warrant exemption from the regulatory requirements of 10 CFR 50 Appendix J pertaining to inclusion of the total Type B and C leakage in the secondary containment bypass leakage and the primary containment leakage rate totals. Granting this exemption will allow tracking the leakage associated with the containment purge line penetrations separately from the total containment leakage rates. Specifically, Section (ii) of 10 CFR 50.12(a)(2) applies.

The proposed exemption 1) is authorized by law in that no law exists which precludes the activities covered by this exemption request, 2) will not present an undue risk to the public health and safety, and 3) is consistent with the common defense and security. Since the containment purge line penetrations will continue to be leak tested in accordance with a separate TS SR and will be evaluated against a specified acceptance criterion based on analysis, application of the regulation in this case is not necessary to achieve the underlying purpose of the rule. Therefore, it has been demonstrated that the criteria of 10 CFR 50.12(a)(2)(ii) are satisfied.

V. REFERENCES

1. Letter from M. J. Pacilio (AmerGen Energy Company, LLC) to U. S. Nuclear Regulatory Commission, "Request for License Amendment Related to Application of Alternative Source Term," dated April 3, 2003
2. NUREG-0853, "Safety Evaluation Report Related to the Operation of Clinton Power Station, Unit No. 1," Supplement No. 6, dated July 1986