

10 CFR 50.90

RS-05-154

December 1, 2005

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 Amendment to Technical Specifications Associated With Secondary Containment Surveillance Requirements**

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," AmerGen Energy Company, LLC (AmerGen) requests an amendment to Facility Operating License No. NPF-62 for Clinton Power Station (CPS), Unit 1. The proposed change revises Technical Specification (TS) 3.6.4.1, "Secondary Containment." Specifically, this change modifies Surveillance Requirement (SR) SR 3.6.4.1.4 and SR 3.6.4.1.5 to clarify the intent of these SRs with respect to secondary containment boundary integrity.

This change is being submitted in accordance with Technical Specification Task Force (TSTF) traveler TSTF-322-A, "Secondary Containment and Shield Building Boundary Integrity SRs," Revision 2. This TSTF was approved by the NRC in a letter dated February 16, 2000.

This request is subdivided as follows:

- Attachment 1 provides an evaluation supporting the proposed change.
- Attachment 2 contains the marked up TS page with the proposed change indicated.
- Attachment 3 contains the marked up TS Bases pages with the change indicated. The TS Bases pages is provided for information only.
- Attachment 4 provides the retyped TS page with the proposed change incorporated.

AmerGen requests approval of the proposed amendment within one year of the date of this letter. Upon approval, the amendment will be implemented within 60 days.

The proposed change has been reviewed by the Plant Operations Review Committee, and approved by the Nuclear Safety Review Board in accordance with the Quality Assurance Program.

We are notifying the State of Illinois of this application for a change to the TS by transmitting a copy of this letter and its attachments to the designated State Official.

If you have any questions concerning this letter, please contact Mr. David Gullott at (630) 657-2819.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 30th day of November 2005.

Respectfully,

A handwritten signature in cursive script that reads "Keith R. Jury".

Keith R. Jury  
Director – Licensing and Regulatory Affairs  
AmerGen Energy Company, LLC

Attachments:

1. Evaluation of Proposed Change
2. Marked Up Technical Specifications Page
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4. Retyped Technical Specifications Page

**ATTACHMENT 1**  
**Evaluation of Proposed Change**

**Subject: Request for Amendment to Technical Specifications Associated With  
Secondary Containment Surveillance Requirements**

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# ATTACHMENT 1

## Evaluation of Proposed Change

### 1.0 DESCRIPTION

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," AmerGen Energy Company, LLC (AmerGen) requests an amendment to Facility Operating License No. NPF-62 for Clinton Power Station (CPS), Unit 1. The proposed change revises Technical Specification (TS) 3.6.4.1, "Secondary Containment." Specifically, this change modifies Surveillance Requirement (SR) SR 3.6.4.1.4 and SR 3.6.4.1.5 to clarify the intent of these SRs with respect to secondary containment boundary integrity. This change is being submitted in accordance with Technical Specification Task Force (TSTF) traveler TSTF-322-A, Revision 2, "Secondary Containment and Shield Building Boundary Integrity SRs."

### 2.0 PROPOSED CHANGE

The proposed change modifies surveillance requirements SR 3.6.4.1.4 and SR 3.6.4.1.5. The proposed change removes the statement that implies the SRs are satisfied when "each" Standby Gas Treatment (SGT) subsystem meets the surveillance performance measures. The proposed change clarifies the SRs to state that the SR is satisfied provided one SGT subsystem is capable of meeting the surveillance performance measures. Additionally, the SRs' Frequency statement is revised to state that the frequency is on a STAGGERED TEST BASIS for each subsystem.

Attachment 2 provides a TS page markup indicating the proposed changes. Attachment 4 provides the retyped TS page incorporating the proposed changes.

### 3.0 BACKGROUND

CPS Unit 1 is a General Electric BWR/6 type plant with a Mark III primary containment structure. The primary containment is enclosed by the secondary containment structure (except for the upper containment personnel air lock penetration). The secondary containment is designed to contain, dilute, and hold up fission products that may leak from the primary containment following a design basis accident (DBA).

The secondary containment structure forms a control volume that serves to hold up and dilute fission products. It is possible for the pressure in this control volume to rise relative to the external (i.e., environmental) pressure. Therefore, to prevent ground level exfiltration while allowing the secondary containment to be designed as a conventional structure, the secondary containment requires support from the SGT system. The SGT system provides the necessary secondary containment support by maintaining control volume pressure less than the external pressure. This function is periodically monitored through TS SRs that monitor the system's ability to rapidly establish and maintain the required pressure in the secondary containment (i.e., SR 3.6.4.1.4 and SR 3.6.4.1.5).

Presently, TS SRs 3.6.4.1.4 and 3.6.4.1.5 may be interpreted to require both SGT subsystems be capable of meeting the SR performance measures in order for SRs 3.6.4.1.4 and 3.6.4.1.5 to be satisfied. Under this interpretation, the inoperability of one SGT subsystem would render the secondary containment inoperable even though the redundant SGT subsystem is operable and able to meet the SR performance measures. The proposed TS changes clarify the intent of SR 3.6.4.1.4 and SR 3.6.4.1.5 to ensure consistent and accurate interpretation.

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## Evaluation of Proposed Change

### 4.0 TECHNICAL ANALYSIS

The SGT system functions to reduce the iodine and particulate concentrations in gases leaking from the primary containment and which are potentially present in the secondary containment atmosphere following a DBA. The CPS Updated Safety Analysis Report (USAR) describes the SGT system as being comprised of two independent equipment subsystems. Each subsystem is designed and sized to provide full functional capability during normal operations and following a DBA.

The SGT system, coupled with the secondary containment, are designed to minimize exfiltration of contaminated air from the secondary containment. This function limits the offsite and control room dose to within the guidelines of 10 CFR 100, "Reactor Site Criteria." In order to perform this function, the secondary containment boundary must be sufficiently leak tight such that the SGT system can maintain the required negative pressure to prevent exfiltration. The TS surveillance tests required by SR 3.6.4.1.4 and SR 3.6.4.1.5 are performed to ensure the leak tight integrity of the secondary containment boundary. These SRs ensure that secondary containment is operable and that the leak tightness of the boundary is within the assumptions of the accident analyses.

SR 3.6.4.1.4 and SR 3.6.4.1.5 are currently written in a manner that implies that if one of the two SGT subsystems is inoperable, the SRs are not met and the secondary containment must be declared inoperable. The TSTF has reviewed this issue and developed general guidance to clarify the intent of these SRs. The clarification and recommended changes are published in TSTF-322-A, Revision 2, "Secondary Containment and Shield Building Boundary Integrity SRs" (Reference 1). The changes recommended in Reference 1 provide alternate wording for the SRs to clarify that the individual SRs are satisfied provided one SGT subsystem is capable of meeting the SR performance measures. Reference 1 has been reviewed and approved by the NRC (Reference 2). The proposed changes associated with this amendment request are consistent with and conform to the approved guidance provided in TSTF-322-A.

### 5.0 REGULATORY ANALYSIS

#### 5.1 No Significant Hazards Consideration

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," AmerGen Energy Company, LLC (AmerGen) requests an amendment to Facility Operating License No. NPF-62 for Clinton Power Station (CPS), Unit 1. The proposed change revises Technical Specification (TS) 3.6.4.1, "Secondary Containment." Specifically, this change modifies Surveillance Requirement (SR) SR 3.6.4.1.4 and SR 3.6.4.1.5 to clarify the intent of these SRs with respect to secondary containment boundary integrity. This change is being submitted in accordance with Technical Specification Task Force (TSTF) traveler TSTF-322-A, "Secondary Containment and Shield Building Boundary Integrity SRs," Revision 2. TSTF-322-A is considered an administrative change since the proposed change to the TS wording does not alter the original intent of the current requirement.

According to 10 CFR 50.92, "Issuance of amendment," paragraph (c), a proposed amendment to an operating license involves a no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

**ATTACHMENT 1**  
**Evaluation of Proposed Change**

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

AmerGen has evaluated the proposed change to the TS for CPS, Unit 1, using the criteria in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The following information is provided to support a finding of no significant hazards consideration.

**1) Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?**

Response: No

This change involves an administrative clarification to reflect the original intent of the Technical Specifications. There is no impact on the availability or capability of the secondary containment or Standby Gas Treatment (SGT) system as a result of the proposed change. Both the secondary containment and SGT system are considered accident-mitigating equipment and are not initiators of any previously evaluated accidents. Therefore, the proposed change does not involve an increase in the probability of an accident previously evaluated. Additionally, the proposed change does not alter the secondary containment or SGT systems' performance measures or their ability to perform their accident mitigation functions. Therefore, the proposed change does not involve a significant increase in the consequences of an accident previously evaluated.

**2) Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?**

Response: No

The proposed changes to the wording of TS SRs 3.6.4.1.4 and 3.6.4.1.5 clarify that only one SGT subsystem is required to ensure the requirements of TS 3.6.4.1 are met. The proposed change does not alter the parameters within which the plant is operated. There are no new system operating conditions or performance measures introduced by this proposed change that will affect the secondary containment and SGT systems' protective or mitigative functions. The proposed changes will not alter the methods in which equipment is operated or tested. No new accident scenarios or assumptions, failure mechanisms, or limiting single failures are introduced as a result of the proposed change.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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**3) Does the proposed amendment involve a significant reduction in a margin of safety?**

Response: No

Margins of safety are established in the design of components, the configuration of components to meet certain performance parameters, and in the establishment of setpoints to initiate alarms or actions. The proposed change does not impact any of these margins of safety parameters. This change involves an administrative clarification to reflect the original intent of the TS. There is no adverse effect on the operability or design requirements of the secondary containment or SGT system. The equipment will continue to be tested in a manner and at a frequency necessary to provide confidence that the equipment can perform its intended safety function. There is no impact on the plant safety analyses. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

**5.2 Applicable Regulatory Requirements/Criteria**

10 CFR 50.36, "Technical specifications," provides the regulatory requirements for the content required by a licensee's TS. USAR Sections 6.5.1, "Engineered Safety Feature (ESF) Filter Systems," and 6.2.3 "Secondary Containment Design Function," describe the design basis of the SGT system and the secondary containment as mitigating a design basis accident that challenges the integrity of containment. This basis is consistent with Criterion 3 of 10 CFR 50.36(c)(2)(ii) for mitigating accidents or transients that assume a failure of or present a challenge to a fission product barrier. 10 CFR 50.36(c)(3) requires that the TS include SRs. The SRs assure the quality of systems and components is maintained, facility operation will be within safety limits, and limiting conditions for operation (LCOs) will be met.

The proposed changes to SR 3.6.4.1.4 and SR 3.6.4.1.5 are consistent with TSTF-322-A. The intent of this TSTF is to clarify the SRs to ensure consistent application and prevent misinterpretation. TSTF-322-A was approved for licensee use by the NRC on February 16, 2000 (Reference 2).

In conclusion, based on the considerations discussed above, (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 NRC's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

**6.0 ENVIRONMENTAL CONSIDERATION**

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation," or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22, "Criterion for categorical

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exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," paragraph (c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

**7.0 REFERENCES**

1. Technical Specification Task Force TSTF-322-A, "Secondary Containment and Shield Building Boundary Integrity SRs," Revision 2
2. Letter from William D. Beckner (U.S. NRC) to James Davis (Nuclear Energy Institute) dated February 16, 2000

## **ATTACHMENT 2**

**Marked Up Technical Specifications Page**

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.4.1.3 Verify one door in each access to secondary containment is closed, except during normal entry and exit.	31 days
SR 3.6.4.1.4 Verify <u>each standby gas treatment (SGT) subsystem will draw down</u> the secondary containment to $\geq 0.25$ inch of vacuum water gauge <u>within the time required</u> .	24 months on a STAGGERED TEST BASIS
SR 3.6.4.1.5 Verify <u>each SGT subsystem can maintain</u> $\geq 0.25$ inch of vacuum water gauge <u>in the secondary containment</u> for 1 hour at a flow rate $\leq 4400$ cfm.	24 months on a STAGGERED TEST BASIS

Can be drawn down  
 Using one Standby Gas Treatment (SGT) subsystem  
 The secondary containment can be maintained  
 Using one SGT subsystem  
 for each SGT subsystem

## **ATTACHMENT 3**

**Marked Up Technical Specifications Bases Pages**

BASES

SURVEILLANCE  
REQUIREMENTS  
(continued)

SR 3.6.4.1.4 and SR 3.6.4.1.5

Insert #1

The SGT System exhausts the secondary containment atmosphere to the environment through appropriate treatment equipment. To ensure that all fission products are treated, SR 3.6.4.1.4 verifies that the SGT System will rapidly establish and maintain a pressure in the secondary containment that is less than the lowest postulated pressure external to the secondary containment boundary. This is confirmed by demonstrating that one SGT subsystem will draw down the secondary containment to  $\geq 0.25$  inches of vacuum water gauge within the required time.

Specifically, the required drawdown time limit is based on ensuring that the SGT system will draw down the secondary containment pressure to  $\geq 0.25$  inches of vacuum water gauge within 12 minutes (i.e., 10 minutes from start of gap release which occurs 2 minutes after LOCA initiation) under LOCA conditions. Typically, however, the conditions under which drawdown testing is performed pursuant to SR 3.6.4.1.4 are different than those assumed for LOCA conditions. For this reason, and because test results are dependent on or influenced by certain plant and/or atmospheric conditions that may be in effect at the time testing is performed, it is necessary to adjust the test acceptance criteria (i.e., the required drawdown time) to account for such test conditions. Conditions or factors that may impact the test results include wind speed, whether the turbine building ventilation system is running, and whether the containment equipment hatch is open (when the test is performed during plant shutdown/outage conditions). The acceptance criteria for the drawdown test are thus based on a computer model (Ref. 6), verified by actual performance of drawdown tests, in which the drawdown time determined for accident conditions is adjusted to account for performance of the test during normal but certain plant conditions. The test acceptance criteria are specified in the applicable plant test procedure(s). Since the drawdown time is dependent upon secondary containment integrity, the drawdown requirement cannot be met if the secondary containment boundary is not intact.

Insert #2

SR 3.6.4.1.5 demonstrates that each SGT subsystem can maintain  $\geq 0.25$  inches of vacuum water gauge for 1 hour at a flow rate  $\leq 4400$  acfm. The 1-hour test period allows secondary containment to be in thermal equilibrium at steady state conditions. Therefore, the tests required per SR 3.6.4.1.4 and SR 3.6.4.1.5 are performed to ensure secondary containment boundary integrity. Since these SRs are secondary containment tests, they need not be performed with each SGT subsystem and an inoperable SGT subsystem does not result in this SR being not met. The SGT subsystems are tested on a STAGGERED TEST BASIS, however, to ensure that in addition to the requirements of LCO 3.6.4.3, either SGT subsystem will perform this test. Operating experience has

(continued)

## INSERT #1

Each SGT subsystem is designed to draw down pressure in the secondary containment to  $\geq 0.25$  inches vacuum water gauge within the time required and maintain pressure in the secondary containment at  $\geq 0.25$  inches of vacuum water gauge for 1 hour at a flow rate of  $\leq 4400$  cfm. To ensure that all fission products released to the secondary containment are treated, SR 3.6.4.1.4 and SR 3.6.4.1.5 verify that a pressure in the secondary containment that is less than the lowest postulated pressure external to the secondary containment boundary can rapidly be established and maintained. When the SGT System is operating as designed, the establishment and maintenance of secondary containment pressure cannot be accomplished if the secondary containment boundary is not intact. Establishment of this pressure is confirmed by SR 3.6.4.1.4, which demonstrates that secondary containment can be drawn down to  $\geq 0.25$  inches of vacuum water gauge in the required time using one SGT subsystem.

## INSERT #2

SR 3.6.4.1.5 demonstrates that the pressure in the secondary containment can be maintained  $\geq 0.25$  inches of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate of  $\leq 4400$  cfm. The 1 hour test period allows secondary containment to be in thermal equilibrium at steady state conditions. The primary purpose of these SRs is to ensure secondary containment boundary integrity. The secondary purpose of these SRs is to ensure that the SGT subsystem being tested functions as designed. There is a separate LCO with Surveillance Requirements which serves the primary purpose for ensuring OPERABILITY of the SGT System. These SRs need not be performed with each SGT subsystem. The SGT subsystem used for these Surveillances is staggered to ensure that in addition to the requirements of LCO 3.6.4.3, either SGT subsystem will perform this test. The inoperability of the SGT System does not necessarily constitute a failure of these Surveillances relative to the secondary containment OPERABILITY.

# **ATTACHMENT 4**

**Retyped Technical Specifications Page**

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.3	Verify one door in each access to secondary containment is closed, except during normal entry and exit.	31 days
SR 3.6.4.1.4	Verify the secondary containment can be drawn down to $\geq 0.25$ inch of vacuum water gauge within the time required using one Standby Gas Treatment (SGT) subsystem.	24 months on a STAGGERED TEST BASIS for each SGT subsystem
SR 3.6.4.1.5	Verify the secondary containment can be maintained $\geq 0.25$ inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate $\leq 4400$ cfm.	24 months on a STAGGERED TEST BASIS for each SGT subsystem