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Nuclear

RS-01-185

10 CFR 50.90

September 17, 2001

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

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

Subject: Request for Amendment to Appendix A, Technical Specifications to Revise
Containment Spray Nozzle Testing Frequency

Reference: Letter from D. V. Pickett (U.S. NRC) to J. K. Wood (FirstEnergy Nuclear
Operating Company), "Perry Nuclear Power Plant, Unit 1 – Issuance of
Amendment (TAC No. MA7136)," dated June 29, 2000.

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," AmerGen Energy Company, LLC (i.e., AmerGen) proposes changes to Appendix A, Technical Specifications (TS), of Facility Operating License No. NPF-62 for Clinton Power Station (CPS). The proposed change is to TS Section 3.6.1.7, "Residual Heat Removal (RHR) Containment Spray System," Surveillance Requirement (SR) 3.6.1.7.4. This proposed change revises the current testing frequency for the containment spray nozzles from "once per 10 years" to "following activities that could result in nozzle blockage."

This proposed change is consistent with the amendment request previously approved for the Perry Nuclear Power Plant in the referenced letter. Therefore, we request approval of this change by March 1, 2002 in order to support preparation for the next refueling outage.

This request is subdivided as follows:

1. Attachment A gives a description and safety analysis of the proposed changes.
2. Attachment B includes the marked-up TS pages with the requested changes indicated and a marked-up copy of the affected pages from the current TS Bases provided for information only.

ADD01

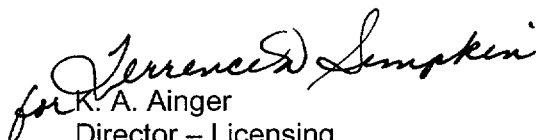
3. Attachment C describes our evaluation performed using the criteria in 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (a)(1) which provides information supporting a finding of no significant hazards consideration in accordance with 10 CFR 50.92, "Issuance of amendment," paragraph (c).
4. Attachment D provides information supporting an Environmental Assessment.

The proposed changes have been reviewed by the CPS Plant Operations Review Committee and approved by the Nuclear Safety Review Board.

AmerGen is notifying the State of Illinois of this request for changes to the TS by transmitting a copy of this letter and its attachments to the designated State Official.

Should you have any questions concerning this letter, please contact Mr. T. A. Byam at (630) 657-2804.

Respectfully,


for K. A. Ainger
Director – Licensing
Mid-West Regional Operating Group

Attachments: Affidavit
 Attachment A: Description and Safety Analysis for Proposed Change
 Attachment B: Marked-up Pages for Proposed Change
 Attachment C: Information Supporting No Significant Hazard Findings
 Attachment D: Information Supporting an Environmental Assessment

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

STATE OF ILLINOIS)
COUNTY OF DUPAGE)
IN THE MATTER OF)
AMERGEN ENERGY COMPANY, LLC) Docket Number
CLINTON POWER STATION, UNIT 1) 50-461

SUBJECT: Request for Amendment to Appendix A, Technical Specifications to
Revise Containment Spray Nozzle Testing Frequency

AFFIDAVIT

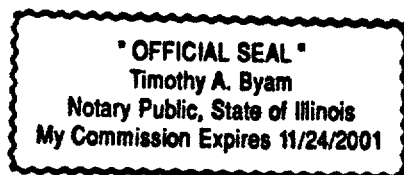
I affirm that the content of this transmittal is true and correct to the best of
my knowledge, information and belief.

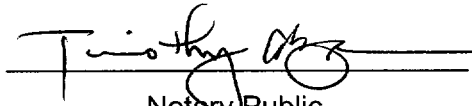

T. W. Simpkin
Manager – Licensing
Mid-West Regional Operating Group

Subscribed and sworn to before me, a Notary Public in and

for the State above named, this 17th day of

September, 2001.




Notary Public

Attachment A
Proposed Technical Specification Change
Clinton Power Station, Unit 1
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**DESCRIPTION AND SAFETY ANALYSIS
FOR THE PROPOSED CHANGES**

A. SUMMARY OF THE PROPOSED CHANGES

In accordance with 10CFR 50.90, "Application for amendment of license or construction permit," AmerGen Energy Company, LLC (i.e., AmerGen) proposes a change to Appendix A, Technical Specifications (TS), of Facility Operating License No. NPF-62 for the Clinton Power Station (CPS). This proposed change will revise the testing frequency for the containment spray nozzles as specified in TS Section 3.6.1.7, "Residual Heat Removal (RHR) Containment Spray System," Surveillance Requirement (SR) 3.6.1.7.4. Specifically, we propose to revise the testing frequency for the containment spray nozzles from "once per 10 years" to "following activities that could result in nozzle blockage."

This change is similar to the amendment request previously approved for the Perry Nuclear Power Plant in Reference 1. The changes are also similar to the Grand Gulf Nuclear Station technical specifications.

The proposed change is described in Section E of this attachment. The marked-up TS pages and the associated TS Bases pages are shown in Attachment B.

B. DESCRIPTION OF THE CURRENT REQUIREMENTS

SR 3.6.1.7.4 requires verification that each containment spray nozzle is unobstructed. This verification is required once per 10 years. The TS Bases also clarify that the test is normally performed by an air or smoke flow test.

C. BASES FOR THE CURRENT REQUIREMENTS

This surveillance is performed every 10 years to verify that the spray nozzles are not obstructed and that flow will be provided when required. This surveillance is normally performed by an air or smoke flow test. The 10-year frequency has been determined to be adequate to detect degradation in performance due to the passive spray nozzle design and its normally dry state.

D. NEED FOR REVISION OF THE REQUIREMENTS

Performance of the air flow test presents a personnel safety risk for the individual(s) required to access the upper portions of the containment to check the nozzle air flow. Since plant safety can be ensured at the proposed frequency, CPS desires to revise the containment spray system testing provisions to require containment spray nozzle testing only after activities that could block the nozzles. Nozzle blockage is considered unlikely, since the nozzles are of a passive design and the system is kept in a normally dry state. The proposed frequency will continue to provide confidence that an unobstructed flow path is available, and will preclude the need for unnecessary testing when no activities have occurred that would introduce debris to the headers, or when no other active degradation mechanism is present.

Attachment A
Proposed Technical Specification Change
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E. DESCRIPTION OF THE PROPOSED CHANGES

The proposed TS change is as follows.

SR 3.6.1.7.4 Frequency will be revised to read "Following activities that could result in nozzle blockage".

The proposed TS change is reflected on a marked-up copy of the affected pages from the CPS TS contained in Attachment B. A marked-up copy of the affected pages from the current TS Bases is also provided in Attachment B for information only. Following NRC approval of this request, we will revise the CPS Bases, in accordance with the TS Bases Control Program of TS Section 5.5.11, to incorporate the changes identified in Attachment B.

F. SAFETY ANALYSIS OF THE PROPOSED CHANGES

The RHR containment spray system is designed to mitigate the effects of any drywell bypass leakage following a line break inside the drywell.

There are two redundant, 100% capacity RHR containment spray subsystems. Each subsystem consists of a suction line from the suppression pool, an RHR pump, a heat exchanger, an isolation valve, and two spray headers. There are two containment spray headers located inside the primary containment at two elevations, outside the drywell, above the refueling floor. On the 'A' Train, the header at the upper elevation consists of 63 equally-spaced spray nozzles and the header at the lower elevation consists of 186 equally-spaced spray nozzles. On the 'B' Train, the upper elevation header has 64 equally-spaced spray nozzles and the lower elevation header consists of 187 equally-spaced spray nozzles.

The containment spray nozzles are Spray Engineering Company Model 1713A nozzles, which are corrosion-resistant, and are threaded into the containment spray headers. The nozzles are designed to atomize and evenly distribute water droplets to the containment atmosphere for the purpose of removing heat and reducing pressure following an accident. The spray headers are maintained dry and are isolated from the water in the RHR system by a single motor-operated valve in each header.

Previous testing has verified that the nozzles are not blocked. Since the time most likely for debris to be introduced into the containment spray headers is during the initial construction and installation of the system, confidence exists that debris that would cause blockage is not present. The initial preoperational test was conducted in August 1986, and the results indicated that no blockage existed. Preoperational testing successfully verified flow through each spray nozzle prior to initial operation. The test used compressed air and streamers to detect air flow through each nozzle. Based on these test results, it is unlikely that there is any residual debris in the header or nozzles from original construction. Containment spray nozzle tests following preoperational testing were conducted in November 1990 (Division 1) and December 1990 (Division 2).

Attachment A
Proposed Technical Specification Change
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These tests confirmed the absence of foreign material (i.e., no blockage). This test was performed nearly five years after initial operation, and no nozzle blockage was identified. If conditions were favorable for corrosion to form, it is expected that some nozzle blockage would have occurred after five years. It is not expected that corrosion or any other mechanism would cause obstruction of the nozzles in the future for the following reasons:

- The temperature of the containment spray header piping is maintained near ambient conditions at all times.
- The air in containment does not contain large amounts of contaminants (i.e., CPS is not located near the ocean and there are no adjacent fossil plants).
- As stated previously, the containment spray headers are maintained dry and isolated from water by a normally closed isolation valve that is subject to containment leakage testing.

The current foreign material exclusion (FME) program requires that any breaches of system boundaries during maintenance activities be appropriately protected from the intrusion of foreign material. These controls normally include, but are not limited to, covers for open pipes, in-progress and closeout inspections, and accounting for tools and materials during work performance. The FME program provides guidelines that establish cleanliness requirements and accounting of material, tools and parts to preclude the introduction of foreign materials into systems or components during maintenance, modification, test or inspection activities. The program demands the highest level of controls for safety related systems such as the containment spray system. The program requires supervision and management involvement if FME integrity is lost or could not be assured and that a condition report be written if an item cannot be found or retrieved. These controls are sufficient to ensure that material is not inadvertently introduced.

Normal plant operation and maintenance practices at CPS are not expected to trigger the surveillance requirement as proposed. Only an unanticipated circumstance would initiate this surveillance, such as an inadvertent spray actuation, a major configuration change, or a loss of foreign material control when working within the affected boundary of the system. CPS procedures will require performance of an evaluation to determine whether a containment spray nozzle test would be required to ensure the nozzles remain unobstructed.

The pipe, fittings, and valves used in the construction of the containment spray headers are of carbon steel materials that are intended to be compatible to prevent galvanic corrosion. This includes ASTM A106, Gr. B and/or ASME SA-106, Gr. B. The nozzles are 304 stainless steel, which was selected, in part, for its corrosion resistant properties. The interface between the carbon steel piping and the stainless steel nozzles is coated to minimize corrosion. The passive nature of the system, coupled with the fact that the spray headers and nozzles are maintained in a dry condition, is not conducive to the presence of an active corrosion mechanism. Likewise, the design, configuration and maintenance of the system are sufficient to provide confidence that other active degradation mechanisms are not present. The containment nozzles are located near the top of containment and are not easily accessed. The introduction of materials other than air or water is considered remote for this reason. Use of chemical cleaners or

Attachment A
Proposed Technical Specification Change
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compounds during maintenance of the upstream, normally closed, isolation valve would be limited and controlled in accordance with plant programs.

A review of past maintenance indicates that no significant overhauls of the system have been performed, other than disassembly of the header isolation valves. A review of maintenance history has found that the containment isolation valves, 1E12F028A and B, were disassembled twice since startup. The first time they were disassembled was due to preparing the system for the containment spray nozzle testing performed in 1990. The second time these valves were disassembled was in the sixth and seventh refueling outages when modification of the valve disks was performed in response to Generic Letter 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves." FME controls were in place during the time these valves were modified. Therefore, the likelihood of introducing foreign materials due to maintenance is extremely low.

Furthermore, a sensitivity analysis was performed to determine the impact of a reduction in containment spray flow rate due to nozzle blockage. Both the total flow and the number of nozzles can be reduced by more than 10% without impacting the peak containment pressure during a small break loss of coolant accident (LOCA) with drywell bypass leakage. This evaluation assumed that the drywell bypass leakage was the maximum allowed by the administrative requirements described in the bases to Technical Specification Surveillance Requirement 3.6.5.1.3. Secondly, significant nozzle plugging does not adversely impact the post-accident iodine concentration in the containment atmosphere, since the containment spray system is not credited with iodine removal.

G. IMPACT ON PREVIOUS SUBMITTALS

We have reviewed the proposed changes regarding impact on any previous submittals, and have determined that there is no impact on any outstanding license amendment requests.

H. SCHEDULE REQUIREMENTS

We request approval of these proposed changes prior to March 1, 2002, to support preparation for the next refueling outage.

I. REFERENCES

- (1) Letter from D. V. Pickett (U.S. NRC) to J. K. Wood (FirstEnergy Nuclear Operating Company), "Perry Nuclear Power Plant, Unit 1 – Issuance of Amendment (TAC No. MA7136)," dated June 29, 2000.

Attachment B
Proposed Technical Specification Change
Clinton Power Station, Unit 1

MARKED-UP TS PAGES FOR PROPOSED CHANGES

REVISED TS PAGES

3.6-25

REVISED BASES PAGES
(PROVIDED FOR INFORMATION ONLY)

B 3.6-43

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.7.1 -----NOTE----- RHR containment spray subsystems may be considered OPERABLE during alignment and operation for decay heat removal when below the RHR cut in permissive pressure in MODE 3 if capable of being manually realigned and not otherwise inoperable. -----</p> <p>Verify each RHR containment spray subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.</p>	31 days
<p>SR 3.6.1.7.2 Verify each RHR pump develops a flow rate of ≥ 3800 gpm on recirculation flow through the associated heat exchanger to the suppression pool.</p>	In accordance with the Inservice Testing Program
<p>SR 3.6.1.7.3 Verify each RHR containment spray subsystem automatic valve in the flow path actuates to its correct position on an actual or simulated automatic initiation signal.</p>	18 months
<p>SR 3.6.1.7.4 Verify each spray nozzle is unobstructed.</p>	<p>Following activities that could result in nozzle blockage. 10 years</p>

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.1.7.3 (continued)

the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.7.4

This Surveillance is performed **following activities that could result in nozzle blockage** to verify that the spray nozzles are not obstructed and that flow will be provided when required. **Such activities may include a loss of foreign material control (or if it cannot be assured), following a major configuration change, or following an inadvertent actuation of containment spray.** This Surveillance is normally performed by an air or smoke flow test. The Frequency is adequate due to the passive nozzle design and its normally dry state and has been shown to be acceptable through operating experience.

REFERENCES

1. USAR, Section 6.2.1.1.5.
 2. ASME, Boiler and Pressure Vessel Code, Section XI.
 3. USAR, Section 5.4.7
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**INFORMATION SUPPORTING A FINDING OF
NO SIGNIFICANT HAZARDS CONSIDERATION**

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

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

AmerGen Energy Company, LLC (i.e., AmerGen), proposes changes to Appendix A, Technical Specifications (TS), of Facility Operating License No. NPF-62 for Clinton Power Station (CPS). This proposed change will revise the testing frequency for the containment spray nozzles as specified in TS Section 3.6.1.7, "Residual Heat Removal (RHR) Containment Spray System," Surveillance Requirement (SR) 3.6.1.7.4. Specifically, we propose to revise the testing frequency for the containment spray nozzles from once per 10 years to following activities that could result in nozzle blockage.

Information supporting the determination that the criteria set forth in 10 CFR 50.92 are met for this amendment request is indicated below.

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

The proposed change revises the testing requirements for the containment spray nozzles to only require verification that each spray nozzle is unobstructed following activities that could result in nozzle blockage. The only event for which the containment spray system is considered an initiator is the maximum containment negative pressure event. This event involves inadvertent actuation of containment spray following a break in the reactor water cleanup system inside containment described in Updated Safety Analysis Report (USAR) Section 6.2.1.1.4.2. This change does not increase the likelihood for an inadvertent actuation of the containment spray system. The proposed change does not have a detrimental impact on the integrity of any plant structure, system, or component that initiates an analyzed event. No active or passive failure mechanisms that could lead to an accident are affected. The proposed change will not alter the operation of, or otherwise increase the failure probability of any plant equipment that initiates an analyzed accident. As a result, the probability of any accident previously evaluated, is not significantly increased.

Attachment C
Proposed Technical Specification Change
Clinton Power Station, Unit 1
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The consequences of a previously evaluated accident are not significantly increased. The proposed change revises the current Surveillance Frequency from 10 years to following activities that could result in spray nozzle blockage. Since activities that could introduce foreign material into the system (such as inadvertent actuation of the containment spray system or loss of foreign material control) are the most likely cause for obstruction, testing or inspection following such activities would verify the nozzle(s) being unobstructed, and the system capable of performing its safety function. No other evolutions require the system boundary to be breached, so introduction of debris during times when maintenance activities are not in progress are precluded. Introduction of foreign materials into the system from the exterior is highly unlikely due to the location of the spray headers, the passive nature of the nozzles, and the fact that the containment spray headers are maintained dry which does not lend itself to active degradation mechanisms such as corrosion. The proposed testing requirements are considered sufficient to provide a high degree of confidence that containment spray flow will be available when required. Therefore, the proposed change does not significantly increase the consequences of an accident previously evaluated.

Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change to the test frequency for the containment spray system nozzles does not involve the use or installation of new equipment. Installed equipment is not operated in a new or different manner. No new or different system interactions are created, and no new processes are introduced. The current foreign material exclusion practices have been reviewed and judged sufficient to provide high confidence that debris will not be introduced during times when the system boundary is breached.

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

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

The revision to the containment spray nozzle testing frequency does not introduce any new setpoints at which protective or mitigative actions are initiated. No current setpoints are altered by this change. The design and functioning of the containment spray system is unchanged. Since the system is not susceptible to corrosion induced obstruction nor is the introduction of foreign material from the exterior likely, the proposed testing frequency is sufficient to provide high confidence that the containment spray system will be available to provide the flow necessary to ensure that the effects of drywell bypass leakage and low energy line breaks are mitigated. Therefore, the capacity of the system will remain unchanged. As a result, this change does not involve a significant reduction in a margin of safety.

Therefore, based upon the above evaluation, we have concluded that these changes do not constitute a significant hazards consideration.

Attachment D
Proposed Technical Specification Change
Clinton Power Station, Unit 1

INFORMATION SUPPORTING AN ENVIRONMENTAL ASSESSMENT

AmerGen Energy Company, LLC (i.e., AmerGen) has evaluated this proposed change against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments." AmerGen has determined that this proposed change meets the criteria for a categorical exclusion set forth in 10 CFR 51.22, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," paragraph (c)(9), and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92, "Issuance of amendment," paragraph (b). This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," which changes 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 that changes an inspection or surveillance requirement, and the amendment meets the following specific criteria.

(i) The proposed changes involve no significant hazards consideration.

As demonstrated in Attachment C, this proposed amendment does not involve any significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed change, which alters the required frequency for containment spray nozzle testing, does not change the design of the plant. As documented in Attachment A, there will be no significant increase in the amounts of any effluents released offsite. This change does not result in an increase in power level, does not increase the production, nor alter the flow path or method of disposal of radioactive waste or byproducts. Therefore, the proposed change will not affect the types or increase the amounts of any effluents released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed change will not result in changes to the normal operation of the facility. The proposed change adjusts the frequency for containment spray nozzle testing. This change will not result in a change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels in the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from this change.