

AmerGen

An Exelon/British Energy Company

Clinton Power Station

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10 CFR 50.90
10 CFR 50.55a(a)(3)

U-603495

June 21, 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 Technical Specifications
Surveillance Requirements for the Main Steam Line Safety Relief Valves

Reference: (1) Letter from W. Beckner (U. S. NRC) to J. Hagan (Entergy Operations, Inc.), "Relief from the Section XI Testing Requirements in the ASME Code for Safety/Relief Valves at Grand Gulf Nuclear Station, Unit 1 (TAC No. M95403)," dated November 18, 1996.

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). Specifically, the proposed changes modify TS Surveillance Requirement (SR) 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1. The proposed changes will eliminate the TS requirement that each valve opens during the manual actuation of the main steam line safety relief valves (SRVs), including those valves that provide the Automatic Depressurization System (ADS) and the low-low set (LLS) valve functions. The affected TS Bases pages are also provided for information only.

Additionally, in accordance with 10 CFR 50.55a, "Codes and standards," paragraph (a)(3), this submittal includes Relief Request 2204, Revision 0. The relief request eliminates the requirement from American Society of Mechanical Engineers (ASME) / American National Standards Institute (ANSI), Operation and Maintenance of Nuclear Power Plants, OM-1987, Part 1, Section 3.4.1.1(d) that after reinstallation, the SRVs open and close during manual actuation.

The proposed changes are similar to TS changes approved for Grand Gulf Nuclear Station, Unit 1, as identified in Reference (1).

A001

The information supporting the proposed TS changes is subdivided as follows.

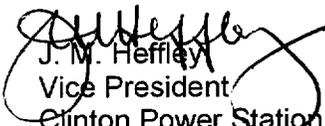
1. Attachment A gives a description and safety analysis for the proposed TS changes.
2. Attachment B includes the marked-up TS pages with the proposed changes indicated. A marked-up copy of the affected TS Bases pages is also provided for information only.
3. Attachment C describes our evaluation performed 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.
5. Attachment E provides Relief Request 2204.

The proposed TS 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 application for amendment by transmitting a copy of this letter and its attachments to the designated State Official.

We request approval of these proposed changes by February 25, 2002 to support the refueling outage scheduled for March 2002. Should you have any questions concerning this submittal, please contact Mr. T. W. Simpkin at (630) 657-2821.

Respectfully,


J. M. Heffley
Vice President
Clinton Power Station

Attachments:

- Affidavit
- Attachment A: Description and Safety Analysis for Proposed Technical Specification Changes
- Attachment B: Marked-up Technical Specification Pages for the Proposed Changes
- Attachment C: Information Supporting a Finding of No Significant Hazards Consideration
- Attachment D: Information Supporting an Environmental Assessment
- Attachment E: Relief Request 2204

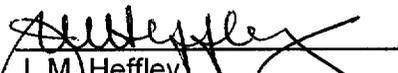
cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Clinton Power Station
Office of Nuclear Facility Safety – Illinois Department of Nuclear Safety

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

SUBJECT: Request for Amendment to Technical Specifications
Surveillance Requirements for the Main Steam Line Safety
Relief Valves

AFFIDAVIT

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

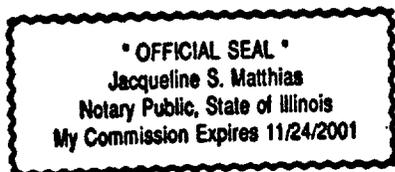

J. M. Heffley
Vice President
Clinton Power Station

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

for the State above named, this 21 day of

June, 2001


Notary Public



ATTACHMENT A
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1
Page 1 of 5

DESCRIPTION AND SAFETY ANALYSIS
FOR PROPOSED TECHNICAL SPECIFICATION CHANGES

A. SUMMARY OF PROPOSED CHANGES

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). Specifically, the proposed changes modify TS Surveillance Requirement (SR) 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1. The proposed changes will eliminate the TS requirement that the valves open during the manual actuation of the main steam line safety relief valves (SRVs), which includes the Automatic Depressurization System (ADS) and the low-low set (LLS) valves.

The proposed changes are described in Section E of this Attachment. The marked-up TS pages are shown in Attachment B. The affected TS Bases pages are also provided in Attachment B for information only.

B. DESCRIPTION OF THE CURRENT REQUIREMENTS

SR 3.4.4.3, SR 3.5.1.7, and SR 3.6.1.6.1 verify that during manual actuation, the required SRVs and solenoids are functioning properly by observing the expected change in the indicated valve position. These SRs are required to be performed at least once per 18 months on a staggered test basis for each valve solenoid.

C. BASES FOR THE CURRENT REQUIREMENT

Sixteen SRVs are installed to protect the reactor pressure vessel (RPV) from overpressurization during upset conditions. The size and number of SRVs are selected such that peak pressure in the nuclear system will not exceed the American Society of Mechanical Engineers (ASME) Code limits for the reactor coolant pressure boundary.

The SRVs can actuate by either of two modes: the safety mode or the relief mode. In the safety mode, the direct action of the pressure in the steam lines will act against a spring-loaded disk that will pop open when the force produced by valve inlet pressure exceeds the opposing force produced by the spring, disk/stem weight, and friction forces. In the relief mode, a pneumatic piston/cylinder and mechanical linkage assembly are used to open the valve by overcoming the opposing spring, disk/stem weight and friction forces, even with the valve inlet pressure equal to 0 psig. The pneumatic operator is arranged such that its malfunction will not prevent the valve disk from lifting if the steam inlet pressure exceeds the spring set pressure required to open the valve. SR 3.4.4.3 verifies that the SRVs can be manually opened. The frequency of SR 3.4.4.3 requires the testing to be performed on a staggered test basis to ensure that each valve solenoid is alternately tested.

ATTACHMENT A
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1
Page 2 of 5

Seven of the 16 SRVs fulfill the ADS function. The ADS is designed to provide depressurization of the RPV during a small break Loss of Coolant Accident (LOCA) if the High Pressure Core Spray (HPCS) System fails or is unable to maintain required water level in the RPV. The SRVs equipped for the ADS function will depressurize the RPV to allow the combination of the Low Pressure Coolant Injection (LPCI) System and Low Pressure Core Spray (LPCS) System to inject into the RPV. The ADS valves can be opened automatically or manually. SR 3.5.1.7 verifies that the ADS valves can be manually opened. The frequency of SR 3.5.1.7 requires the testing to be performed on a staggered test basis to ensure that each valve solenoid is alternately tested.

Five of the 16 SRVs are equipped for the LLS function. The LLS logic causes two LLS valves to be opened at a lower pressure than the relief or safety mode pressure setpoints and causes all the LLS valves to stay open longer, such that reopening of more than one SRV is prevented on subsequent actuations. Therefore, the LLS function prevents excessive short duration SRV cycles with valve actuation at the relief setpoint. SR 3.6.1.6.1 verifies that the LLS valves can be manually opened. The frequency of SR 3.6.1.6.1 requires the testing to be performed on a staggered test basis to ensure that each valve solenoid is alternately tested.

D. NEED FOR REVISION OF THE REQUIREMENT

As a minimum, 25 percent of the SRVs are removed from the plant and setpoint tested in accordance with the Inservice Testing Program and SR 3.4.4.1. The setpoint testing program includes the manual actuation of the SRVs during the bench testing of the valves. A second set of spare SRVs are reinstalled in the plant and SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1 are performed on all of the valves to manually actuate the valves with plant installed equipment.

Experience at CPS, and at other plants such as Grand Gulf, has indicated that repeated manual actuation of the SRVs can lead to through-seat leakage during plant operation. In the current operating cycle for CPS, approximately 63% (i.e., 10 of 16) of the valves are exhibiting seat leakage. Seven valves exhibited leakage following startup from the Fall 2000 refueling outage, and an additional three valves developed leakage following forced outages in December, 2000 and February, 2001. The SRV leakage is directed to the containment suppression pool causing a need to increase the frequency of suppression pool cooling, unless a plant shutdown occurs to remove and replace the leaking SRV(s). Additionally, the Boiling Water Reactor Owner's Group (BWROG) Evaluation of NUREG-0737, "Clarification of TMI Action Plan Requirements," Item II.K.3.16, "Reduction of Challenges and Failures of Relief Valves," recommended that the number of SRV valve openings be reduced as much as possible and unnecessary challenges should be avoided. In addition, NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants," NUREG-0123, "Standard Technical Specifications for General Electric Boiling Water Reactors" and NUREG-0626, "Generic Evaluation of Feedwater Transients and Small Break Loss-of-Coolant Accidents in GE-Designed Operating Plants and Near-Term Operating License Applications," also recommended reducing the number of challenges to the SRV valves.

The proposed changes to SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1 will allow the uncoupling of the SRV stem from the pneumatic valve actuator prior to performing the applicable SR. This will allow

ATTACHMENT A
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1
Page 3 of 5

the verification that the actuator functions without requiring the opening of the SRV. The SRVs removed each refueling outage will continue to be manually actuated during the bench testing of the valves as part of the setpoint testing program. Additionally, the uncoupling of the SRV stem from the actuator will allow increased manual actuation testing of the SRV solenoids.

E. DESCRIPTION OF THE PROPOSED CHANGE

The proposed changes to TS SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1 remove the requirement that the valves open when the required SRVs are manually actuated, and replaces it with the requirement that the SRV valve actuators stroke on a manual actuation.

F. SAFETY ANALYSIS OF THE PROPOSED CHANGES

The SRVs at CPS are Dikkers 8x10, direct-acting, spring loaded, safety valves with attached pneumatic actuators. The SRVs are designed to perform as either a safety valve or a relief valve. The safety mode of operation is independent and separate from the relief mode. Major SRV valve components are shown on the attached Figure.

The safety mode of operation is initiated when the force produced by the increasing static inlet steam pressure overcomes the opposing spring, disk/stem weight, and frictional forces acting to move the disk in the opening direction.

The relief mode of operation is initiated when an electrical signal is received at any or all of the solenoid valves located on the pneumatic relief-mode actuator assembly. The manual actuation of the SRVs is initiated from the control room. The solenoid and air control valve will open to allow an air source to pressurize the lower side of the piston in the pneumatic cylinder to push it upwards. This action is transmitted through a lever arm and pivot mechanism which in turn lifts the valve stem/disk, thereby opening the valve to allow steam discharge through the valve. Upon deenergization of the solenoid, the air valve will reposition to allow the pressurized air in the cylinder to vent to atmosphere, thus closing the valve.

The ADS is designed to provide depressurization of the RPV during a small break LOCA, if the HPCS System fails or is unable to maintain required water level in the RPV. The ADS consists of seven of the 16 SRVs. The SRVs equipped for the ADS function will depressurize the RPV to allow the combination of the LPCI System and LPCS System to inject into the RPV.

Five of the 16 SRVs are equipped for the LLS function. The LLS logic causes two LLS valves to be opened at a lower pressure than the relief or safety mode pressure setpoints and causes all the LLS valves to stay open longer, such that reopening of more than one SRV is prevented on subsequent actuations. Therefore, the LLS function prevents excessive short duration SRV cycles with valve actuation at the relief setpoint.

The proposed changes to SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1 will result in the testing of the manual actuation of the SRVs being performed in two overlapping steps when tested in conjunction with the requirements of SR 3.4.4.1. The SR 3.4.4.1 setpoint testing of the SRVs is

ATTACHMENT A
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1
Page 4 of 5

performed after the valve and actuator assemblies have been removed from the plant and transported to an approved test facility. The valves are bench-tested to verify the safety and relief modes of valve operation. The safety mode is tested by verifying that the pressure below the valve disk that is required to open the valve is consistent with TS requirements. The relief mode is tested by providing air to the valve actuator and verifying the performance of the valve actuator and the lever and pivot mechanism to open the valve.

The proposed changes to SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1 will verify that the valve actuator for each SRV, ADS and LLS valve, strokes when manually actuated after the valve is installed in the plant. The testing will be performed with the actuator uncoupled from the SRV stem to allow the testing of the manual actuation electrical circuitry, solenoid and air control valve, and the actuator without causing the SRV, ADS or LLS valve to open. Following cycling, the relief-mode actuator is recoupled and the proper positioning of the stem nut is independently verified.

Main steam SRVs are removed and replaced in accordance with approved maintenance procedures. Additionally, a review of maintenance history has determined that no errors have occurred with the installation of an SRV. Also, there are procedural controls to ensure that system cleanliness is such that no foreign materials are introduced into the system. Therefore, there is extremely high confidence that the SRV discharge piping will not become blocked.

Therefore, all the components necessary to manually actuate the SRV, ADS or LLS valve will continue to be tested by the requirements of SR 3.4.4.1 and the proposed requirements of SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1 without potentially causing through-seat leakage in the valves.

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 by February 25, 2002 to support the refueling outage scheduled for March 2002.

I. REFERENCE

- (1) Letter from W. Beckner (U. S. NRC) to J. Hagan (Entergy Operations, Inc.), "Relief from the Section XI Testing Requirements in the ASME Code for Safety/Relief Valves at Grand Gulf Nuclear Station, Unit 1 (TAC No. M95403)," dated November 18, 1996.

ATTACHMENT A
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1
Page 5 of 5

CPS-USAR

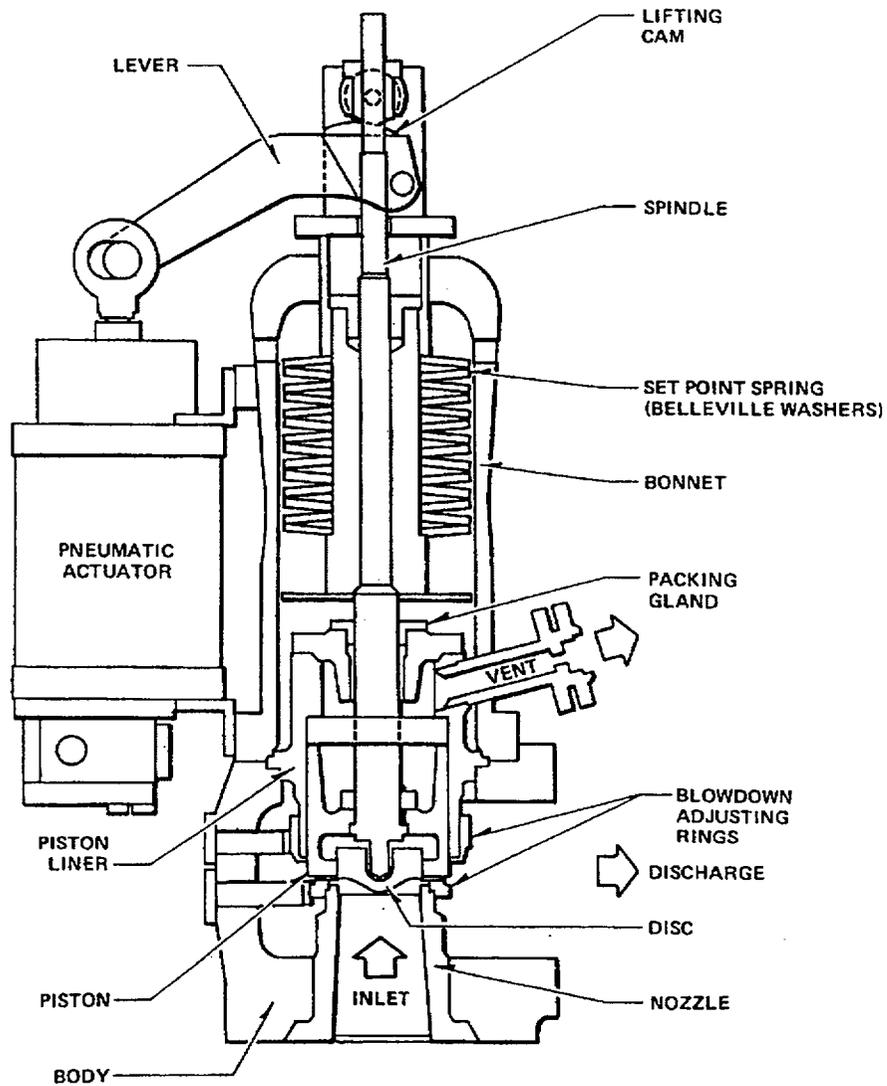


Figure 5.2-10. Schematic of Safety/Relief Valve with Auxiliary Actuating Device

ATTACHMENT B
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1

MARKED-UP TECHNICAL SPECIFICATION PAGES
FOR THE PROPOSED CHANGE

3.4-11
3.5-5
3.6-23

MARKED-UP TECHNICAL SPECIFICATION BASES PAGES
(FOR INFORMATION ONLY)

B3.4-21
B3.4-22
B3.5-12
B3.5-13
B3.5-14
B3.5-14a
B3.6-37
B3.6-38

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY								
SR 3.4.4.1	<p>Verify the safety function lift setpoints of the required S/RVs are as follows:</p> <table border="1"> <thead> <tr> <th>Number of S/RVs</th> <th>Setpoint (psig)</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>1165 ± 34.9</td> </tr> <tr> <td>5</td> <td>1180 ± 35.4</td> </tr> <tr> <td>4</td> <td>1190 ± 35.7</td> </tr> </tbody> </table> <p>Following testing, lift settings shall be within ± 1%.</p>	Number of S/RVs	Setpoint (psig)	7	1165 ± 34.9	5	1180 ± 35.4	4	1190 ± 35.7	In accordance with the Inservice Testing Program
Number of S/RVs	Setpoint (psig)									
7	1165 ± 34.9									
5	1180 ± 35.4									
4	1190 ± 35.7									
SR 3.4.4.2	<p>-----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify each required relief function S/RV actuates on an actual or simulated automatic initiation signal.</p>	18 months								
SR 3.4.4.3	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify each required S/RV opens actuator strokes when manually actuated.</p>	18 months on a STAGGERED TEST BASIS for each valve solenoid								

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.1.5 -----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.</p>	<p>18 months</p>
<p>SR 3.5.1.6 -----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify the ADS actuates on an actual or simulated automatic initiation signal.</p>	<p>18 months</p>
<p>SR 3.5.1.7 -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify each ADS valve opens actuator strokes when manually actuated.</p>	<p>18 months on a STAGGERED TEST BASIS for each valve solenoid</p>
<p>SR 3.5.1.8 -----NOTE----- ECCS actuation instrumentation is excluded. -----</p> <p>Verify the ECCS RESPONSE TIME for each ECCS injection/spray subsystem is within limits.</p>	<p>18 months</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.6.1 -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify each LLS valve opens actuator strokes when manually actuated.</p>	<p>18 months on a STAGGERED TEST BASIS for each valve solenoid</p>
<p>SR 3.6.1.6.2 -----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify the LLS System actuates on an actual or simulated automatic initiation signal.</p>	<p>18 months</p>

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.4.4.2 (continued)

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the SR when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note that excludes valve actuation. This prevents an RPV pressure blowdown.

SR 3.4.4.3

~~A manual actuation of each required S/RV is performed to verify that the valve is functioning properly. If this testing is performed using reactor steam, adequate reactor steam pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the S/RVs divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure and flow are achieved to perform this test. Adequate pressure at which this test is to be performed is consistent with the pressure recommended by the valve manufacturer.~~

~~Plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME requirements, prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure and flow are reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR.~~

~~Alternatively, the S/RV(s) may be manually actuated without reactor steam provided measures are taken to preclude damage to the S/RV upon reclosure.~~

~~If the valve fails to actuate due only to the failure of the solenoid but is capable of opening on overpressure, the safety function of the S/RV is considered OPERABLE.~~

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.4.4.3 (continued)

A manual actuation of each required S/RV (those valves removed and replaced to satisfy SR 3.4.4.1) is performed to verify that the valve is functioning properly. This SR can be demonstrated by one of two methods. If performed by Method 1, plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME requirements (Ref. 6), prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure is reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR. If performed by Method 2, valve OPERABILITY has been demonstrated for all installed S/RVs based upon the successful operation of a test sample of S/RVs.

1. Manual actuation of the S/RV with verification of the response of the turbine control valves or bypass valves, by a change in the measured steam flow, or any other method suitable to verify steam flow (e.g., tailpipe temperature or acoustic monitoring). Adequate reactor steam pressure must be available to perform this test to avoid damaging the valve. Also, adequate flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the S/RVs divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure and flow are achieved to perform this test. Adequate pressure at which this test is to be performed is consistent with the pressure recommended by the valve manufacturer.
2. The sample population of S/RVs tested to satisfy SR 3.4.4.1 will also be stroked in the relief mode during "as-found" testing to verify proper operation of the S/RV. The successful performance of the test sample of S/RVs provides reasonable assurance that the remaining installed S/RVs will perform in a similar fashion. After the S/RVs are replaced, the relief-mode actuator of the newly-installed S/RVs will be uncoupled from the S/RV stem, and cycled to ensure that no damage has occurred to the S/RV during transportation and installation. Following cycling, the relief-mode actuator is recoupled and the proper positioning of the stem nut is independently verified.

This verifies that each replaced S/RV will properly perform its intended function. If the valve fails to actuate due only to the failure of the solenoid but is capable of opening on overpressure, the safety function of the S/RV is considered OPERABLE.

The 18 month on a STAGGERED TEST BASIS Frequency ensures that each solenoid for each S/RV is alternately tested. The 18 month Frequency was developed based on the S/RV tests required by the ASME Boiler and Pressure Vessel Code, Section XI (Ref. 1). Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. ASME, Boiler and Pressure Vessel Code, Section III and XI.
 2. USAR, Section 5.2.2.
 3. USAR, Section 15.
 4. NEDC-32202P, "SRV Setpoint Tolerance and Out-of-Service Analysis for Clinton Power Station, "August 1993."
 5. Calculation IP-0-0032.
 6. ASME/ANSI OM-1987, Operation and Maintenance of Nuclear Power Plants, Part 1.
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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.5.1.5 (continued)

was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note that excludes vessel injection/spray during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

SR 3.5.1.6

The ADS designated S/RVs are required to actuate automatically upon receipt of specific initiation signals. A system functional test is performed to demonstrate that the mechanical portions of the ADS function (i.e., solenoids) operate as designed when initiated either by an actual or simulated initiation signal, causing proper actuation of all the required components. SR 3.5.1.7 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1 overlap this Surveillance to provide complete testing of the assumed safety function.

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note that excludes valve actuation. This prevents an RPV pressure blowdown.

SR 3.5.1.7

~~A manual actuation of each ADS valve is performed to verify that the valve and solenoids are functioning properly. If this testing is performed using reactor steam, adequate reactor steam pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow~~

(continued)

BASES

SURVEILLANCE
REQUIREMENTSSR 3.5.1.7 (continued)

~~must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the ADS valves divert steam flow upon opening. Sufficient time is therefore allowed, after the required pressure and flow are achieved, to perform this test. Adequate pressure at which this test is to be performed is consistent with the pressure recommended by the valve manufacturer. Reactor startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME requirements, prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure and flow are reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR. Alternatively, the S/RV(s) may be manually actuated without reactor steam provided measures are taken to preclude damage to the S/RV upon reclosure.~~

A manual actuation of each required ADS valve (those valves removed and replaced to satisfy SR 3.4.4.1) is performed to verify that the valve is functioning properly. This SR can be demonstrated by one of two methods. If performed by Method 1, plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME requirements (Ref. 21), prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure is reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR. If performed by Method 2, valve OPERABILITY has been demonstrated for all installed ADS valves based upon the successful operation of a test sample of S/RVs.

1. Manual actuation of the ADS valve, with verification of the response of the turbine control valves or bypass valves, by a change in the measured steam flow, or any other method suitable to verify steam flow (e.g., tailpipe temperature or acoustic monitoring). Adequate reactor steam pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the ADS valves divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure and flow are achieved to

perform this test. Adequate pressure at which this test is to be performed is consistent with the pressure recommended by the valve manufacturer.

2. The sample population of S/RVs tested to satisfy SR 3.4.4.1 will also be stroked in the relief mode during "as-found" testing to verify proper operation of the S/RV. The successful performance of the test sample of S/RVs provides reasonable assurance that all ADS valves will perform in a similar fashion. After the S/RVs are replaced, the relief-mode actuator of the newly-installed S/RVs will be uncoupled from the S/RV stem, and cycled to ensure that no damage has occurred to the S/RV during transportation and installation. Following cycling, the relief-mode actuator is recoupled and the proper positioning of the stem nut is independently verified. This verifies that each replaced S/RV will properly perform its intended function.

SR 3.5.1.6 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1 overlap this Surveillance to provide complete testing of the assumed safety function. The STAGGERED TEST BASIS Frequency ensures that both solenoids for each ADS valve relief-mode actuator are alternately tested. The Frequency of the required relief-mode actuator testing is based on the tests required by ASME OM, Part 1, (Ref. 21) as implemented by the Inservice Testing Program of Specification 5.5.6. The testing Frequency required by the Inservice Testing Program is based on operating experience and valve performance. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

~~SR 3.5.1.6 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1 overlap this Surveillance to provide complete testing of the assumed safety function.~~

~~The Frequency of 18 months on a STAGGERED TEST BASIS ensures that both solenoids for each ADS valve are alternately tested. The Frequency is based on the need to perform this Surveillance under the conditions that apply just prior to or during a startup from a plant outage and the potential for unplanned transients. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~

SR 3.5.1.8

This SR ensures that the ECCS RESPONSE TIMES are within limits for each of the ECCS injection and spray subsystems. The response time limits (i.e., <42 seconds for the LPCI subsystems, <41 seconds for the LPCS subsystem, and <27 seconds for the HPCS system) are specified in applicable surveillance test procedures. This SR is modified by a
(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.5.1.8 (continued)

Note which identifies that the associated ECCS actuation instrumentation is not required to be response time tested. This is supported by Reference 15.

Response time testing of the remaining subsystem components is required. However, of the remaining subsystem components, the time for each ECCS pump to reach rated speed is not directly measured in the response time tests. The time(s) for the ECCS pumps to reach rated speed is bounded, in all cases, by the time(s) for the ECCS injection valve(s) to reach the full-open position. Plant-specific calculations show that all ECCS motor start times at rated voltage are less than two seconds. In addition, these calculations show that under degraded voltage conditions, the time to rated speed is less than five seconds.

ECCS RESPONSE TIME tests are conducted every 18 months. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

With regard to ECCS RESPONSE TIME values obtained pursuant to this SR, as read from plant indication instrumentation, the specified limit is considered to be a nominal value and therefore does not require compensation for instrument indication uncertainties (Ref. 20).

BASES (continued)

- REFERENCES
1. USAR, Section 6.3.2.2.3.
 2. USAR, Section 6.3.2.2.4.
 3. USAR, Section 6.3.2.2.1.
 4. USAR, Section 6.3.2.2.2.
 5. USAR, Section 15.2.8.
 6. USAR, Section 15.6.4.
 7. USAR, Section 15.6.5.
 8. 10 CFR 50, Appendix K.
 9. USAR, Section 6.3.3.
 10. 10 CFR 50.46.
 11. USAR, Section 6.3.3.3.
 12. Memorandum from R.L. Baer (NRC) to V. Stello, Jr. (NRC), "Recommended Interim Revisions to LCO's for ECCS Components," December 1, 1975.
 13. USAR, Table 6.3-8.
 14. USAR, Section 7.3.1.1.1.4.
 15. NEDO-32291-A, "System Analyses for Elimination of Selected Response Time Testing Requirements," January 1994.
 16. Calculation IP-0-0044.
 17. Calculations 01HP09/10/11, IP-C-0042.
 18. Calculations 01LP08/11/14, IP-C-0043.
 19. Calculations 01RH19/20/22/24/25, IP-C-0041.
 20. Calculation IP-0-0024.
 21. ASME/ANSI OM-1987, Operation and Maintenance of Nuclear Power Plants, Part 1.
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BASES

ACTIONS

B.1 and B.2 (continued)

power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE
REQUIREMENTS

SR 3.6.1.6.1

~~A manual actuation of each LLS valve is performed to verify that the valve and solenoids are functioning properly. If this testing is performed using reactor steam, adequate reactor steam pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the LLS valves divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure and flow are achieved to perform this test. Adequate pressure at which this test is to be performed is consistent with the pressure recommended by the valve manufacturer. Plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified by Reference 2 prior to valve installation.~~

~~Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure and flow are reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR.~~

~~Alternatively, the S/RV(s) may be manually actuated without reactor steam provided measures are taken to preclude damage to the S/RV upon reclosure.~~

A manual actuation of each required LLS valve (those valves removed and replaced to satisfy SR 3.4.4.1) is performed to verify that the valve is functioning properly. This SR can be demonstrated by one of two methods. If performed by Method 1, plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME requirements (Ref. 2), prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure is reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR. If performed by Method 2, valve OPERABILITY has been demonstrated for all installed LLS valves based upon the successful operation of a test sample of S/RVs.

1. Manual actuation of the LLS valve, with verification of the response of the turbine control valves or bypass

valves, by a change in the measured steam flow, or any other method suitable to verify steam flow (e.g., tailpipe temperature or acoustic monitoring). Adequate reactor steam pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the LLS valves divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure and flow are achieved to perform this test. Adequate pressure at which this test is to be performed is consistent with the pressure recommended by the valve manufacturer.

2. The sample population of S/RVs tested to satisfy SR 3.4.4.1 will also be stroked in the relief mode during "as-found" testing to verify proper operation of the S/RV. The successful performance of the test sample of S/RVs provides reasonable assurance that all LLS valves will perform in similar fashion. After the S/RVs are replaced, the relief-mode actuator of the newly-installed S/RVs will be uncoupled from the S/RV stem, and cycled to ensure that no damage has occurred to the S/RV during transportation and installation. Following cycling, the relief-mode actuator is recoupled and the proper positioning of the stem nut is independently verified. This verifies that each replaced S/RV will properly perform its intended function.

The STAGGERED TEST BASIS Frequency ensures that both solenoids for each LLS valve relief-mode actuator are alternatively tested. The Frequency of the required relief-mode actuator testing is based on the tests required by ASME OM Part 1 (Ref. 2), as implemented by the Inservice Testing Program of Specification 5.5.6. The testing Frequency required by the Inservice Testing Program is based on operating experience and valve performance. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

~~The Frequency of 18 months on a STAGGERED TEST BASIS ensures that each solenoid for each S/RV is alternately tested. The 18 month Frequency was developed based on the S/RV tests required by the ASME Boiler and Pressure Vessel Code, Section XI (Ref. 2). Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Staggered Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.~~

(continued)

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.6.1.6.2

The LLS designed S/RVs are required to actuate automatically upon receipt of specific initiation signals. A system functional test is performed to verify that the mechanical portions (i.e., solenoids) of the automatic LLS function operate as designed when initiated either by an actual or simulated automatic initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.5.4 overlaps this SR to provide complete testing of the safety function.

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note that excludes valve actuation. This prevents a reactor pressure vessel pressure blowdown.

REFERENCES

1. USAR, Section 5.2.2.2.3.
 2. ~~ASME, Boiler and Pressure Vessel Code, Section XI.~~
ASME/ANSI OM-1987, Operation and Maintenance of Nuclear Power Plants, Part 1.
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ATTACHMENT C
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1
Page 1 of 3

**INFORMATION SUPPORTING A FINDING OF NO SIGNIFICANT HAZARDS
CONSIDERATION**

AmerGen Energy Company, LLC, (i.e., AmerGen) has evaluated the proposed changes to the Technical Specifications (TS) for Clinton Power Station (CPS) and has determined that the proposed changes do not involve a significant hazards consideration and is providing the following information to support 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:

Involve a significant increase in the probability or consequences of an accident previously evaluated; or

Create the possibility of a new or different kind of accident from any previously evaluated; or

Involve a significant reduction in a margin of safety.

The proposed changes are to Appendix A, Technical Specifications (TS), of Facility Operating License No. NPF-62 for CPS. Specifically, the proposed changes modify TS Surveillance Requirement (SR) 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1. The proposed changes will eliminate the TS requirement that each valve opens during the manual actuation of the main steam line safety relief valves (SRVs), Automatic Depressurization System (ADS) valves and low-low set (LLS) valves.

The information supporting the determination that the criteria set forth in 10 CFR 50.92 are met for the proposed change is provided below.

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

The proposed changes modify TS SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1. The proposed changes will eliminate the TS requirement that each valve opens during the manual actuation of the SRVs. Accidents are initiated by the malfunction of plant equipment, or the catastrophic failure of plant structures, systems or components. The performance of SRV testing is not a precursor to any accident previously evaluated and does not change the manner in which the SRVs are operated. The proposed testing requirements will not contribute to the failure of the SRVs nor any plant structure, system or component. Thus, the proposed changes to the performance of SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1 do not have any affect on the probability of an accident previously evaluated.

ATTACHMENT C
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1
Page 2 of 3

The performance of SRV testing provides assurance that the SRVs are capable of depressurizing the reactor pressure vessel (RPV). This will protect the reactor vessel from overpressurization and allowing the combination of the Low Pressure Coolant Injection (LPCI) System and Low Pressure Core Spray (LPCS) System to inject into the RPV as designed. The LLS logic causes two LLS valves to be opened at a lower pressure than the relief or safety mode pressure setpoints and causes all the LLS valves to stay open longer, such that reopening of more than one SRV is prevented on subsequent actuations. Thus, the LLS function prevents excessive short duration SRV cycles with valve actuation at the relief setpoint. The proposed changes involve the manner in which the subject valves are tested, and have no affect on the types or amounts of radiation released or the predicted offsite doses in the event of an accident. The proposed testing requirements are sufficient to provide confidence that the SRVs, ADS valves and the LLS valves will perform their intended safety functions. Thus, the radiological consequences of any accident previously evaluated are not increased.

Therefore, the proposed changes do not involve a significant increase in the probability or 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 changes to SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1 do not affect the assumed accident performance of the SRVs, nor any plant structure, system or component previously evaluated. The proposed changes do not install any new equipment, and installed equipment is not being operated in a new or different manner. The valves continue to be bench-tested to verify the safety and relief modes of valve operation. The proposed changes will allow the testing of the manual actuation electrical circuitry, solenoid and air control valve, and the actuator without causing the SRV to open. No setpoints are being changed which would alter the dynamic response of plant equipment. Administrative controls, such as verifying that the actuator assembly has been recoupled following testing, minimize the potential for valve failures. Accordingly, no new failure modes are introduced. The changes credit the performance of bench testing, setpoint verification and in-situ actuator exercising with providing sufficient testing to ensure the valves will perform their required safety functions.

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

ATTACHMENT C
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1
Page 3 of 3

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

The proposed changes to SR 3.4.4.3, SR 3.5.1.7 and SR 3.6.1.6.1 will allow the uncoupling of the SRV stem from the other components associated with the manual actuation of the SRVs. The proposed changes will allow the testing of the manual actuation electrical circuitry, solenoid and air control valve, and the actuator without causing the SRV to open. The SRVs will continue to be manually actuated by the bench-test valve control system of the setpoint testing program and prior to installation in the plant. The proposed changes do not effect the valve setpoint or the operational criteria that directs the SRVs to be manually opened during plant transients. There are no changes proposed which alter the setpoints at which protective actions are initiated, and there is no change to the operability requirements for equipment assumed to operate for accident mitigation.

Thus, the proposed changes do not involve a significant reduction in a margin of safety.

Therefore, based upon the above, AmerGen has concluded that the proposed changes involve no significant hazards consideration.

ATTACHMENT D
Proposed Technical Specification Changes for
Clinton Power Station, Unit 1

INFORMATION SUPPORTING AN ENVIRONMENTAL ASSESSMENT

AmerGen Energy Company, LLC (i.e., AmerGen), has evaluated these proposed changes against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21, "Criteria for an identification of licensing and regulatory actions requiring environmental assessments." AmerGen has determined that the proposed changes meet 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 the changes are being proposed as an amendment to a license issued pursuant to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," that the proposed changes are to 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 are proposed to an inspection or a surveillance requirement, and the amendment meets the following specific criteria.

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

As demonstrated in Attachment C, these proposed changes involve no 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 changes to surveillance testing do not affect the types or amount of any effluent that may be released offsite. These changes do not result in an increase in power level, do not increase the production, nor alter the flow path or method of disposal of radioactive waste or byproducts. Therefore, there will be no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

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

There will be no 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 within the plant. Therefore, there will be no significant increase in individual or cumulative occupational radiation exposure resulting from these proposed changes.

ATTACHMENT E
Relief Request for
Clinton Power Station, Unit 1
Page 1 of 3

Relief Request - 2204
(Rev. 0)

COMPONENT IDENTIFICATION

Code Class: Class 1

Reference: American Society of Mechanical Engineers (ASME) /
American National Standards Institute (ANSI), Operation and
Maintenance of Nuclear Power Plants, OM-1987, Part 1
(OM-1)

Examination Category: B/C or C

Description: Main steam pressure relief valves with auxiliary actuating
devices that are maintained or refurbished in place, removed
for maintenance and testing, or both, and reinstalled shall be
remotely actuated to verify open and close capability of the
valve prior to resumption of electric power generation.

Affected Components:	<u>EPN</u>	<u>Description</u>
	1B21-F041A	Main Steam Line Safety Relief Valve
	1B21-F041B*	Main Steam Line Safety Relief Valve
	1B21-F041C*	Main Steam Line Safety Relief Valve
	1B21-F041D*	Main Steam Line Safety Relief Valve
	1B21-F041F*	Main Steam Line Safety Relief Valve
	1B21-F041G	Main Steam Line Safety Relief Valve
	1B21-F041L	Main Steam Line Safety Relief Valve
	1B21-F047A*	Main Steam Line Safety Relief Valve
	1B21-F047B	Main Steam Line Safety Relief Valve
	1B21-F047C*	Main Steam Line Safety Relief Valve
	1B21-F047D	Main Steam Line Safety Relief Valve
	1B21-F047F#	Main Steam Line Safety Relief Valve
	1B21-F051B#	Main Steam Line Safety Relief Valve
	1B21-F051C#	Main Steam Line Safety Relief Valve
	1B21-F051D#	Main Steam Line Safety Relief Valve
	1B21-F051G*#	Main Steam Line Safety Relief Valve

*SRV with Automatic Depressurization System function

#SRV with Low-Low Set function

ATTACHMENT E
Relief Request for
Clinton Power Station, Unit 1
Page 2 of 3

CODE REQUIREMENTS

OM-1, Section 3.4.1.1(d) requires that each valve that has been maintained or refurbished in place, removed for maintenance and testing, or both, and reinstalled shall be remotely actuated at reduced system pressure to verify open and close capability of the valve prior to resumption of electric power generation for main steam pressure relief valves with auxiliary actuating devices.

CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED

Relief is requested from the OM-1, Section 3.4.1.1(d) requirement that after installation, the remote actuation of main steam pressure relief valves with auxiliary actuating devices shall include the opening and closing of the valve.

BASIS FOR RELIEF

Pursuant to 10 CFR 50.55a, "Codes and standards," paragraph (a)(3), relief is requested from the requirement of OM-1, Section 3.4.1.1(d). The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

As a minimum, 25 percent of the SRVs are removed from the plant and setpoint tested in accordance with the Inservice Testing Program and SR 3.4.4.1. The setpoint testing program includes the manual actuation of the SRVs by the bench-test valve control system. After installation in the plant, the valves are actuated a second time by the plant installed manual actuation equipment.

Experience at CPS has indicated that repeated manual actuation of the main steam line safety relief valves (SRVs), which includes the Automatic Depressurization System (ADS) valves and the low-low set (LLS) valves, can lead to valve through-seat leakage during plant operation.

The relief request will allow the testing of the SRVs to be performed in two separate steps. The manual actuation of the valves by the bench-test valve control system of the setpoint testing program, will verify the opening and closing of the valve with the actuator coupled to the valve stem. The plant installed manual actuation equipment will be tested after valve installation in the plant and with the valve stem uncoupled from the actuator. This will allow the testing of the plant installed manual actuation electrical circuitry, solenoid and air control valve, and the actuator without causing the valve to open. Therefore, all the components of the SRV will continue to be tested.

This uncoupled actuator test will also be performed following any maintenance activity that could affect the relief mode of the associated SRV.

Additionally, the Boiling Water Reactor Owner's Group (BWROG) Evaluation of NUREG-0737, "Clarification of TMI Action Plan Requirements," Item II.K.3.16, "Reduction of Challenges and Failures of Relief Valves," recommended that the number of SRV openings be reduced as much as possible and unnecessary challenges should be avoided. The NRC in NUREG-1482, " Guidelines for Inservice Testing at Nuclear Power

ATTACHMENT E
Relief Request for
Clinton Power Station, Unit 1
Page 3 of 3

Plants," NUREG 0123, " Standard Technical Specifications for General Electric Boiling Water Reactors " and NUREG-0626, " Generic Evaluation of Feedwater Transients and Small Break Loss-of-Coolant Accidents in GE-Designed Operating Plants and Near-Term Operating License Applications," also recommended reducing the number of challenges to the SRV valves.

PROPOSED ALTERNATIVE PROVISIONS

The remote actuation of the SRVs shall be performed in two separate steps. The manual actuation of the SRVs by the bench-test valve control system of the setpoint testing program, will verify the opening and closing of the valve with the actuator coupled to the valve stem. The pneumatic valve actuator will be tested after valve installation in the plant and with the valve stem uncoupled from the actuator.

APPLICABLE TIME PERIODS

Relief is requested for the remainder of the second 10-year interval.