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GNRO-2007/00076

January 8, 2008

U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Attention: Document Control Desk

Subject: Request for Alternative VRR-GGNS-2007-01 and VRR-GGNS-2007-02  
Requests for Alternative from ASME OM Code 5-year Test Interval for  
Main Steam Safety Relief Valves

Grand Gulf Nuclear Station, Unit 1  
Docket No. 50-416  
License No. NPF-29

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a(a)(3)(ii), Entergy Operations, Inc. (Entergy) requests approval of proposed Relief Requests VRR-GGNS-2007-1 and VRR-GGNS-2007-2 to extend the 5-year test interval, on a one-time basis, for 12 Main Steam Safety Relief Valves (SRVs). Specifically, Entergy requests relief from American Society of Mechanical Engineers (ASME) Code – 2001 Edition with addenda through OMB Code-2003 Addenda, "Code of Operation and Maintenance of Nuclear Power Plants," Subsection ISTC, Mandatory Appendix I.

Entergy requests approval of proposed Relief Request VRR-GGNS-2007-1 by May 9, 2008 to enable continued operation of GGNS Unit 1 until the sixteenth refueling outage (RF-16), which is currently scheduled to begin in Fall of 2008. Additionally, Entergy requests approval of Relief Request VRR-GGNS-2007-2 by May 9, 2008 to enable startup of GGNS Unit 1 following RF-16, and continued operation until the seventeenth refueling outage (RF-17) and the eighteenth refueling outage (RF-18). RF-17 is currently scheduled to begin in Spring of 2010 and RF-18 is scheduled to begin in Winter of 2012.

This letter contains no commitments.

Should you have any questions regarding this submittal, please contact Michael Larson at (601) 437-6685.

Sincerely,

CAB/MJL

A handwritten signature in black ink, appearing to read "Charles A. Bottemiller", written over a horizontal line.

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Enclosures: 1. Valve Relief Request – VRR-GGNS-2007-1  
2. Valve Relief Request – VRR-GGNS-2007-2

cc: NRC Senior Resident Inspector  
Grand Gulf Nuclear Station  
Port Gibson, MS 39150

U. S. Nuclear Regulatory Commission  
ATTN: Mr. Elmo E. Collins (w/a)  
Regional Administrator, Region IV  
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U.S. Nuclear Regulatory Commission  
ATTN: Mr. Bhalchandra Vaidya, NRR/DORL (w/2)  
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**Enclosure 1**

**GNRO-2007/00076**

**Relief Request VRR-GGNS-2007-1**

**REFUELING OUTAGE 16  
VALVE  
1B21-041E**

**Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)  
Impracticality without Compensating Increase in Level of Quality or Safety**

**Enclosure 1 – Page 1 of 4**  
**Relief Request VRR-GGNS-2007-1**

**Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)**  
**Hardship or Unusual Difficulty without Compensating**  
**Increase in Level of Quality or Safety**

<b>PLANT/UNIT:</b>	Grand Gulf Nuclear Station (GGNS) Unit 1
<b>INTERVAL:</b>	Third 10 Year Inservice Testing Interval
<b>COMPONENTS AFFECTED:</b>	<p>Main Steam Safety Relief Valves (SRVs)</p> <p>Model: G-471</p> <p>Manufacturer: Dikkers Valves</p> <p>Table 1 provides valve-specific identification data, test dates, installation dates, and requested extension duration for the one valve.</p>
<b>CODE EDITION AND ADDENDA:</b>	ASME OM Code 2001 Edition through 2003 Addenda.
<b>REQUIREMENTS:</b>	<p>ASME OM Code, 2001 Edition through 2003 Addenda, Subsection ISTC Mandatory Appendices, Section I-1320, Test Frequencies, Class 1 Pressure Relief Valves. This section states that all Class 1 Pressure Relief Valves from each valve group shall be tested at least once every 5 years with a minimum of 20% of the valves from each valve group tested within any 24 months. This 20% shall be previously untested valves, if they exist.</p>
<b>REASON FOR RELIEF REQUEST:</b>	<p>10CFR50.55a(f)(4) directs a licensee to meet inservice testing requirements for ASME Code Class 1 valves set forth in the ASME OM Code and addenda. The third ten-year inservice testing (IST) interval for GGNS is based on the 2001 Edition through 2003 addenda of the ASME OM Code.</p> <p>The ASME OM Code, Subsection ISTC-3200 "Inservice Testing", states that inservice testing shall commence when the valves are required to be operable to fulfill their required function(s). Subsection ISTC-5240 directs that safety and relief valves meet the inservice testing requirements set forth in Mandatory Appendix I. Mandatory Appendix I, I-1320 of the ASME OM Code states that Class 1 pressure relief valves shall be mandatory tested at least once every 5 years starting with initial electric power generation. Mandatory Appendix I also states that all valves of each valve group shall be tested at least once every 5 years. The required test ensures that the SRVs, which are located on each of the main steam lines between the reactor vessel and the first isolation valve within the drywell, will open at the pressures bounded by the safety analysis.</p> <p>In accordance with 10CFR 50.55a, "Codes and Standards," paragraph (a)(3)(ii), Entergy requests relief from the requirements of ASME OM Code, Mandatory Appendix, I-1320 for one SRV at GGNS Unit 1 until the sixteenth GGNS Unit 1 refueling outage (i.e., RF-16), which is scheduled to begin in Fall of 2008. The requested duration of the relief is thirteen months for the affected SRV.</p> <p>NUREG-1482, Revision 1, "Guidelines for Inservice Testing at Nuclear Power Plants," Section 3.1, "Inservice Test Frequencies and Extensions for Valve Testing," states that the NRC may approve relief to extend a test interval for extenuating</p>

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**Relief Request VRR-GGNS-2007-1**

circumstances in which (1) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, or (2) the system design makes compliance impractical. Impractical conditions that would justify a test deferral are those that result in an unnecessary plant shutdown, cause unnecessary challenges to safety systems, or cause unnecessary cycling of equipment.

Compliance with the applicable requirements of the ASME OM Code for the one SRV at GGNS Unit 1, prior to RF-16 is not practical, in that the evolution would result in an unnecessary plant shutdown, unnecessary challenges to safety systems, and unnecessary cycling of equipment, all without a compensating increase in the level of quality or safety.

Entergy currently replaces up to eight of 20 SRVs at GGNS Unit 1 every refueling outage, so that all valves are removed and tested every three refueling outages. This methodology supports the ASME OM Code requirements for testing previously untested Class 1 pressure relief valves. After each valve is removed and as-found tested, the SRVs are refurbished to a like-new condition, and recertified by two consecutive lifts within 1% of the valve's set pressure.

Entergy utilizes in-house technicians to perform as-found and as-left testing, inspection, and refurbishment of the GGNS Unit 1 SRVs. Entergy has an approved and qualified procedure for disassembly and inspection of SRVs. This procedure requires that each SRV be disassembled and inspected after a maximum of sixty months of inservice use, independent of the as-found test results. The procedure identifies the critical components that are required to be inspected for wear and defects, and the critical dimensions that are required to be measured during the inspection. If components are found worn or outside of the specified tolerance(s), the components are either reworked to within the specified tolerances, or replaced. The SRV is then re-assembled; the valve is then recertified by two consecutive lifts within 1% of the valve's set pressure.

Since the SRVs are safety related, they are then stored to "C" level storage requirements in the GGNS warehouse facility in the specially designed storage/shipping containers. A review of vendor storage recommendations indicates that the SRVs are required to be stored in a controlled environment, inside specially designed storage containers prior to installation as replacement SRVs. The controlled environment in which these SRVs are stored is not subject to thermal cycling or vibration (i.e., the normal operating conditions to which SRVs are subjected). Table 1 provides both the storage time (i.e., the time period from the as-left test to the installation date) and the installed time for the affected SRV at the start of RF-16.

As part of a review of the GGNS IST program with respect to a recent ASME OM Code interpretation, Entergy identified a discrepancy relative to the 5-year test interval. The ASME OM Code interpretation (i.e., ASME Code Interpretation 01-18 from the ASME OM Code, 2004 Edition) indicated that implementation of the 5-year test interval should be based upon a "test-to-test" duration. The historical method used at GGNS Unit 1 with respect to SRV test intervals has been to use an "installation-to-test" duration, and to ensure that all installed SRVs would not exceed a corresponding 5-year testing frequency.

During the upcoming GGNS Unit 1 refueling outage (i.e., RF-16), which is scheduled to begin in Fall of 2008, Entergy will replace and test six SRVs. The one affected SRV that is listed in Table 1 is currently scheduled to be replaced during RF-16.

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**Relief Request VRR-GGNS-2007-1**

	<p>This replacement and test schedule is consistent with the historical Entergy method for implementing Code Requirements (i.e., the valves will have been installed for less than or equal to three operating cycles). However, utilizing a test-to-test interpretation, the 5-year interval for the one affected SRV will have expired prior to beginning RF-16, as indicated in Table 1.</p>
<b>PROPOSED ALTERNATIVE AND BASIS:</b>	<p>For the third ten-year IST interval at GGNS Unit 1, Entergy proposes to remove and test the one affected SRV during RF-16, along with five other scheduled SRVs that will not have expired by RF-16.</p> <p>IST history for SRVs at GGNS from 2001 to the present indicates that all but one of 33 total tests of SRVs that have been installed for three operating cycles (i.e., 54 months) have successfully passed the ASME OM Code as-found acceptance criteria of plus or minus 3%. Historical test data indicates that 20 of the 33 tests remained within the as-left tolerance of plus or minus 1%. The as-found test data for the one SRV that lifted outside the 3% tolerance shows the valve exceeded the acceptance criteria in the negative or conservative direction. The SRV lifted 3.5% below its acceptance range. Two successful pressure tests were performed immediately after the initial "as-found" test. The lift pressures for these two tests were 0.06% and 0.03% above the valves set pressure, well within the as-left tolerance of plus or minus 1%.</p> <p>The Entergy data analysis also indicates that the GGNS test data is consistent with reliable and consistent performance of the Dikkers Model G-471 SRVs seen at other nuclear stations, including Clinton Power Station (CPS) and Perry Nuclear Power Plant (PNPP). At Clinton Power Station, since 2001, all but three of 32 SRVs have successfully passed the ASME OM Code as-found acceptance criteria of plus or minus 1%. PNPP personnel have indicated that station experience with Dikkers Model G-471 SRVs has been reliable and consistent, and recalled no failures in recent years.</p> <p>Finally, Entergy has reviewed the historical SRV vendor technical information program manual (i.e., Dikkers), to identify any operating and/or maintenance experience with Model G-471 valves that could provide additional insights regarding the impact of controlled environment storage upon SRVs. The vendor manual indicated that, in general, there is no degradation in the valve when stored in a controlled environment for a period of up to five years before actual installation.</p> <p>In addition to historical test results, the current GGNS Unit 1 reload ASME overpressure analysis assumes that seven of twenty SRVs are out of service. The assumed operable SRVs include seven safety valves and six relief valves at the highest opening setpoints. The analysis assumes the safety valves open to relieve pressure at an upper limit of 4% above their respective set pressures and the relief valves at an upper limit of 30 psig above their respective set pressures. These values are greater than the plus 3% of the safety setpoints and plus 15 psig of the relief setpoints. These conservative assumptions provide additional assurance that the requested relief from the ASME OM Code requirement for the subject SRVs would not result in a decrease in the level of quality or safety.</p>
<b>DURATION:</b>	<p>This proposed alternative is requested until the re-start after RF-16, which is to commence in Fall of 2008. Table 1 provides the requested test interval extension for the affected SRV.</p>

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**Relief Request VRR-GGNS-2007-1**

<b>PRECEDENTS:</b>	<p>In Reference 1, the NRC reviewed and approved a relief request for Susquehanna Steam Electric Station, Units 1 and 2 to extend the SRV test interval duration for individual valves to six years for the entire third 10-year Inservice Testing interval.</p> <p>In Reference 2, the NRC reviewed and approved a relief request for Nine Mile Point, Unit 2 to extend the SRV test interval duration for individual valves to three refueling outages or approximately six years for the entire third 10-year Inservice Testing interval. In both approvals, the NRC allowed for a total installed interval of at least six years in contrast to this one time request to extend the test interval for one SRV by a maximum of 13 months.</p> <p>In References 3 and 4, the NRC reviewed and approved relief requests for Clinton Power Station, Unit 1 to extend the test interval for eight SRVs up to 23 months due to ALARA considerations and six SRVs up to 9 months due to unnecessary plant shutdown.</p>
<b>REFERENCES:</b>	<ol style="list-style-type: none"> <li>1. Letter from R. J. Laufer (USNRC) to B. L. Shriver (SSES), "Susquehanna Steam Electric Station Units 1 and 2 - Third 10-Year Interval Inservice Testing (IST) Program Plans," dated March 10, 2005 – (Docket Number NPF-014, Accession Number ML050690239)</li> <li>2. Letter from M. Banerjee (USNRC) to J.H. Mueller (NMPC), "Nine Mile Point Nuclear Power Station, Unit No. 2 – Alternative to American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Regarding Inservice Testing of Safety Relief/Relief Valves (TAC No. MB0290, NPF-069)," dated April 17, 2001 [NMPC Submitted Request November 28, 2000]</li> <li>3. Letter R. Gibbs (USNRC) to C. G. Pardee (CPS), "Clinton Power Station, Unit No. 1 – Relief Request No. 2209 from 5-Year Test Requirement for Safety Relief Valves" (TAC No. MD6622, NPF-062, Accession Number ML073190479), dated December 16, 2007 [CPS Submitted Request August 30, 2007]</li> <li>4. Letter R. Gibbs (USNRC) to C. M. Crane (CPS), "Clinton Power Station, Unit No. 1 – Temporary Relief from 5-Year Test Requirement for Safety Relief Valves" (TAC No. MD6621, NPF-062, Accession Number ML072540550), dated September 12, 2007 [CPS Submitted Request August 30, 2007]</li> </ol>
<b>STATUS:</b>	Submitted for Nuclear Regulatory Commission review.

**Table 1**

Valve Location	Valve Serial Number	Last Test Date	Installation Date	Storage Duration	Scheduled Replacement Outage	Scheduled Replacement Date	Installed Time at Replacement	Requested Interval Extension
1B21F041E	160817	8/21/02	3/15/04	19 months	RF-16	9/27/08	54 months	13 months

**ENCLOSURE 2**

**GNRO-2007/00076**

**Relief Request VRR-GGNS-2007-2**

**REFUELING OUTAGE 17**

**VALVES**

**1B21-F041K**

**1B21-F041F**

**1B21-F051F**

**1B21-F051B**

**1B21-F041D**

**1B21-F047D**

**REFUELING OUTAGE 18**

**VALVES**

**1B21-F047L**

**1B21-F041G**

**1B21-F047G**

**1B21-F051C**

**1B21-F047C**

**Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)  
Impracticability without Compensating Increase in Level of Quality or Safety**



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**Relief Request VRR-GGNS-2007-2**

Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)  
**Hardship or Unusual Difficulty without Compensating  
Increase in Level of Quality or Safety**

<b>PLANT/UNIT:</b>	Grand Gulf Nuclear Station (GGNS) Unit 1
<b>INTERVAL:</b>	Third 10 Year Inservice Testing Interval
<b>COMPONENTS AFFECTED:</b>	<p>Grand Gulf Nuclear Station (GGNS) Unit 1, Main Steam Safety Relief Valves (SRVs)</p> <p>Model: G-471</p> <p>Manufacturer: Dikkers Valves</p> <p>Table 1 provides valve-specific identification data, test dates, installation dates, and requested extension duration for sixteen valves.</p>
<b>CODE EDITION AND ADDENDA:</b>	ASME OM Code 2001 Edition through 2003 Addenda.
<b>REQUIREMENTS:</b>	<p>ASME OM Code 2001 Edition through 2003 Addenda, Subsection ISTC Mandatory Appendices, Section I-1320, Test Frequencies, Class 1 Pressure Relief Valves. This section states that all Class 1 Pressure Relief Valves shall be tested at least once every 5 years with a minimum of 20% of the valves from each valve group tested within any 24 months. This 20% shall be previously untested valves, if they exist.</p>
<b>REASON FOR RELIEF REQUEST:</b>	<p>10 CFR 50.55a(f)(4) directs a licensee to meet inservice testing requirements for ASME Code Class 1 valves set forth in the ASME OM Code and addenda. The third ten-year inservice testing (IST) interval for GGNS is based on the 2001 Edition through 2003 addenda of the ASME OM Code.</p> <p>The ASME OM Code, Subsection ISTC-3200 "Inservice Testing," states that inservice testing shall commence when the valves are required to be operable to fulfill their required function(s). Subsection ISTC-5240 directs that safety and relief valves meet the inservice testing requirements set forth in Mandatory Appendix I. Mandatory Appendix I, I-1320 of the ASME OM Code states that Class 1 pressure relief valves shall be tested at least once every 5 years starting with initial electric power generation. Mandatory Appendix I also states that all valves of each valve group shall be tested at least every 5 years. The required test ensures that the SRVs, which are located on each of the main steam lines between the reactor vessel and the first isolation valve within the drywell, will open at the pressures bounded by the safety analysis.</p> <p>In accordance with 10CFR 50.55a, "Codes and Standards," paragraph (a)(3)(ii), Entergy requests relief from the requirements of ASME OM Code, Mandatory Appendix I, I-1320 for six SRVs at GGNS Unit 1 until the seventeenth GGNS Unit 1 refueling outage (RF-17), which is scheduled to begin in Spring of 2010. The requested duration of the relief is between 16 and 17 months for the affected SRVs. Relief is also requested for five SRVs at GGNS Unit 1 until the eighteenth GGNS Unit 1 refueling outage (RF-18), which is scheduled to begin in Winter of 2012. The requested duration of the relief is between 1 and 18 months for the affected SRVs.</p>

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**Relief Request VRR-GGNS-2007-2**

NUREG-1482, Revision 1, "Guidelines for Inservice Testing at Nuclear Power Plants," Section 3.1, "Inservice Test Frequencies and Extensions for Valve Testing," states that the NRC may approve relief to extend a test interval for extenuating circumstances in which (1) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, or (2) the system design makes compliance impractical. Impractical conditions that would justify a test deferral are those that result in an unnecessary plant shutdown, cause unnecessary challenges to safety systems, or cause unnecessary cycling of equipment.

Compliance with the applicable requirements of the ASME OM Code for the eleven SRVs would result in hardship due to unnecessary personnel radiation exposure, without a compensating increase in the level of quality or safety.

Entergy currently replaces up to eight of 20 SRVs at GGNS Unit 1 every refueling outage, so that all valves are removed and tested every three refueling outages. This methodology supports the ASME OM Code requirements for testing previously untested Class 1 pressure relief valves. After each valve is removed and as-found tested, the SRVs are refurbished to a like-new condition, and recertified by two consecutive lifts within 1% of the valve's set pressure.

Entergy utilizes in-house technicians to perform as-found and as-left testing, inspection, and refurbishment of the GGNS Unit 1 SRVs. Entergy has an approved and qualified procedure for disassembly and inspection of SRVs. This procedure requires that each SRV be disassembled and inspected after a maximum of sixty months of inservice use, independent of the as-found test results. The procedure identifies the critical components that are required to be inspected for wear and defects, and the critical dimensions that are required to be measured during the inspection. If components are found worn or outside of the specified tolerance(s), the components are either reworked to within the specified tolerances, or replaced. The SRV is then re-assembled, the valve is then recertified by two consecutive lifts within 1% of the valve's set pressure.

Since the SRVs are safety related, they are then stored to "C" level storage requirement in the GGNS warehouse facility in the specially designed storage/shipping containers. A review of vendor storage recommendations indicates that the SRVs are required to be stored in a controlled environment, inside specially designed storage containers prior to installation as replacement SRVs. The controlled environment in which these SRVs are stored is not subject to thermal cycling or vibration (i.e., the normal operating conditions to which SRVs are subjected). Table 1 provides both the storage time (i.e., the time period from the as-left test to the installation date) and the installed time for the affected SRVs at the start of RF-17 and RF-18.

As part of a review of the GGNS IST program with respect to a recent ASME OM Code interpretation, Entergy identified a discrepancy relative to the 5-year test interval. The ASME OM Code interpretation (i.e., ASME Code Interpretation 01-18 from the ASME OM Code, 2004 Edition) indicated that implementation of the 5-year test interval should be based upon a "test-to-test" duration. The historical method used at GGNS Unit 1 with respect to SRV test intervals has been to use an "installation-to-test" duration, and to ensure that all installed SRVs would not exceed a 5-year testing frequency.

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**Relief Request VRR-GGNS-2007-2**

During the upcoming GGNS Unit 1 refueling outage (i.e., RF-16), which is scheduled to begin in Fall of 2008, Entergy will replace and test six SRVs. At start-up from RF-16, the eleven SRVs will still be within the 5-year test-to-test interval. These valves are scheduled for replacement in outages RF-17 and RF-18. Utilizing the test-to-test interpretation, the 5-year interval for six of the affected SRVs will have expired prior to start of RF-17 and five SRVs will have expired prior to start of RF-18. This replacement and test schedule is consistent with the historical Entergy method for implementing code requirements (i.e., the valves will have been installed for less than or equal to three operating cycles). Table 1 provides details for each affected SRV.

In order to comply with OM-1, Section 1.3.3, utilizing the test-to-test duration interpretation, seven additional SRVs would have to be removed and tested during RF-16, which is in addition to removal and testing of the six SRVs already scheduled for RF-16. Without relief, the additional RF-16 outage work due to the inclusion of the seven additional SRVs would be contrary to the principles of As Low As Reasonably Achievable (ALARA), in that the removal and replacement of the additional seven SRVs will result in an estimated additional 5.2 person-Rem of cumulative radiation exposure. This additional cumulative radiation exposure represents a hardship for GGNS Unit 1, without a compensating increase in the level of quality or safety, as discussed in the Proposed Alternative and Basis section.

**PROPOSED  
ALTERNATIVE AND  
BASIS:**

For the third ten-year IST interval at GGNS Unit 1, Entergy proposes to remove and test the six affected SRVs scheduled during RF-17 and the other five SRVs scheduled during RF-18 as outlined in Table 1.

All SRVs are in the upper elevations of the drywell. The major contributors to radiation exposure are the Main Steam Lines, including the SRVs, along with High Pressure Core Spray and Low Pressure Core Spray lines passing through the area.

Removal of an installed SRV and installation of a replacement SRV requires removal of insulation and appurtenances on the SRV and unbolting the SRV. Once unbolted, the SRV is maneuvered from its location and lowered to the first elevation and transported through the drywell equipment hatch. Due to the size of the valves, a crew of five to seven personnel is necessary to safely move each valve.

GGNS evaluated the historical cumulative radiation exposure at GGNS for removal and replacement of SRVs from the last four refueling outages. The work evolutions necessary to remove and replace these valves each refueling outage, which includes the removal and replacement of the eight SRVs, are conducted under equivalent radiological conditions and with the same personnel requirements. This historical cumulative radiation exposure data is provided in Table 2.

Based upon this data, GGNS has concluded that the expected cumulative radiation exposure to remove and replace a single SRV would be approximately 0.740 person-Rem. Therefore, the increase in work scope for RF-16 associated with removal and replacement of eleven additional SRVs would result in approximately 5.2 person-Rem of additional radiation exposure during RF-16, without a compensating increase in the level of quality or safety.

IST history for SRVs at GGNS from 2001 to the present indicates that all but one of 33 total tests of SRVs that have been installed for three operating cycles (i.e., 54 months) have successfully passed the ASME OM Code as-found acceptance criteria of plus or minus 3%. Historical test data indicates that 20 of the 33 tests remained

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**Relief Request VRR-GGNS-2007-2**

within the as-left tolerance of plus or minus 1%. The as-found test data for the one SRV that lifted outside the 3% testing tolerance shows the valve exceeded the acceptance criteria in the negative, or conservative direction. The SRV lifted 3.5% below its acceptance range. Two successful pressure tests were performed immediately after the initial “as-found” test. The lift pressures for these two tests were 0.06% and 0.03% above the valves set pressure, well within the as-left tolerance of plus or minus 1%.

The Entergy data analysis also indicates that the GGNS test data is consistent with reliable and consistent performance of the Dikkers Model G-471 SRVs seen at other nuclear stations, including Clinton Power Station (CPS) and Perry Nuclear Power Plant (PNPP). At Clinton Power Station, since 2001, all but three of 32 SRVs have successfully passed the ASME OM Code as-found acceptance criteria of plus or minus 3%. PNPP personnel have indicated that station experience with Dikkers Model G-471 SRVs has been reliable and consistent, and recalled no failures in recent years.

Finally, Entergy has reviewed the historical SRV vendor technical information program manual (i.e., Dikkers), to identify any operating and/or maintenance experience with Model G-471 valves that could provide additional insights regarding the impact of controlled environment storage upon SRVs. The vendor manual indicated that, in general, there is no degradation in the valve when stored in a controlled environment for a period of up to five years before actual installation.

In addition to historical test results, the current GGNS Unit 1 reload ASME overpressure analysis assumes that seven of twenty total SRVs are out of service. The assumed operable SRVs include seven safety valves and six relief valves at the highest opening setpoints. The analysis assumes the safety valves open to relieve pressure at an upper limit of 4% above their respective set pressures and the relief valves at an upper limit of 30 psig above their respective set pressures. These values are greater than the plus 3% of the safety setpoints and plus 15 psig of the relief setpoints. These conservative assumptions provide additional assurance that the requested relief from the ASME OM Code requirement for the subject SRVs would not result in a decrease in the level of quality or safety.

**DURATION:**

This proposed alternative is requested until re-start after RF-17 scheduled to commence Spring of 2010 and RF-18 scheduled to commence Winter of 2012. Table 1 provides the requested test interval extension for the affected SRVs.

**PRECEDENTS:**

In Reference 1, the NRC reviewed and approved a relief request for Susquehanna Steam Electric Station, Units 1 and 2 to extend the SRV test interval duration for individual valves to six years for the entire third 10-year Inservice Testing interval.

In Reference 2, the NRC reviewed and approved a relief request for Nine Mile Point, Unit 2 to extend the SRV test interval duration for individual valves to three refueling outages or approximately six years for the entire third 10-year Inservice Testing interval. In both approvals, the NRC allowed for a total installed interval of at least six years in contrast to this one time request to extend the test interval for six SRVs by a maximum of nine months.

In References 3 and 4, the NRC reviewed and approved relief requests for Clinton Power Station, Unit 1 to extend the test interval for eight SRVs up to 23 months due to ALARA considerations and six SRVs up to 9 months due to unnecessary plant shutdown.

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**Relief Request VRR-GGNS-2007-2**

**REFERENCES:**

1. Letter from R. J. Laufer (USNRC) to B. L. Shriver (SSES), "Susquehanna Steam Electric Station Units 1 and 2 - Third 10-Year Interval Inservice Testing (IST) Program Plans," dated March 10, 2005– (Docket Number NPF-014, Accession Number ML050690239)
2. Letter from M. Banerjee (USNRC) to J.H. Mueller (NMPC), " Nine Mile Point Nuclear Power Station, Unit No. 2 – Alternative to American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Regarding Inservice Testing of Safety Relief/Relief Valves (TAC No. MB0290, NPF-069)," dated April 17, 2001 [NMPC Submitted Request November 28, 2000]
3. Letter R. Gibbs (USNRC) to C. G. Pardee (CPS), "Clinton Power Station, Unit No. 1 – Relief Request No. 2209 from 5-Year Test Requirement for Safety Relief Valves" (TAC No. MD6622, NPF-062, Accession Number ML073190479), dated December 16, 2007 [CPS Submitted Request August 30, 2007]
4. Letter R. Gibbs (USNRC) to C. M. Crane (CPS), "Clinton Power Station, Unit No. 1 – Temporary Relief from 5-Year Test Requirement for Safety Relief Valves" (TAC No. MD6621, NPF-062, Accession Number ML072540550), dated September 12, 2007 [CPS Submitted Request August 30, 2007]

**STATUS:**

Submitted for Nuclear Regulatory Commission review.

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**Relief Request VRR-GGNS-2007-2**

**Table 1**

<b>Valve Location</b>	<b>Valve Serial Number</b>	<b>Last Test Date</b>	<b>Installation Date</b>	<b>Storage Duration</b>	<b>Scheduled Replacement Outage</b>	<b>Scheduled Replacement Date</b>	<b>Installed Time at Replacement</b>	<b>Requested Interval Extension</b>
1B21F041K	160796	1/9/2004	10/3/2005	21 months	RF-17	4/18/2010	55 months	16 months
1B21F041F	160836	12/5/2003	10/3/2005	22 months	RF-17	4/18/2010	55 months	17 months
1B21F051F	160831	12/4/2003	10/3/2005	22 months	RF-17	4/18/2010	55 months	17 months
1B21F051B	160844	12/15/2003	10/3/2005	22 months	RF-17	4/18/2010	55 months	17 months
1B21F041D	160838	01/09/2004	10/3/2005	21 months	RF-17	4/18/2010	55 months	16 months
1B21F047D	160808	01/09/2004	10/3/2005	21 months	RF-17	4/18/2010	55 months	16 months
1B21F047L	160825	1/25/2007	3/21/2007	2 months	RF-18	2/19/2012	59 months	1 months
1B21F041G	160819	9/13/2005	3/21/2007	19 months	RF-18	2/19/2012	59 months	18 months
1B21F047G	160804	9/20/2005	3/21/2007	19 months	RF-18	2/19/2012	59 months	18 months
1B21F051C	160812	9/15/2005	3/21/2007	19 months	RF-18	2/19/2012	59 months	18 months
1B21F047C	160803	9/20/2005	3/21/2007	19 months	RF-18	2/19/2012	59 months	18 months

**Table 2**

**Past Cumulative Radiation Exposure**

<b>Outage</b>	<b>RF15</b>	<b>RF14</b>	<b>RF13</b>	<b>RF12</b>
<b>Number of SRVs Replaced</b>	8	11	6	6
<b>Cumulative Person-rem</b>	4.98	8.10	5.87	3.81

**Projected Cumulative Radiation Exposure Dose if Relief IS Approved**

<b>Outage</b>	<b>RF-16</b>	<b>RF-17</b>	<b>RF-18</b>	<b>RF19</b>
<b>Number of SRVs Replaced</b>	6	8	6	6
<b>Cumulative Person-rem</b>	4.4	5.9	4.4	4.4

**Projected Cumulative Radiation Exposure Dose if Relief IS NOT Approved**

<b>Outage</b>	<b>RF-16</b>	<b>RF-17</b>	<b>RF-18</b>	<b>RF19</b>
<b>Number of SRVs Replaced</b>	13	6	6	8
<b>Cumulative Person-rem</b>	9.6	4.4	4.4	5.9