

10 CFR 50.55a

RA-11-089

November 17, 2011

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

Oyster Creek Nuclear Generating Station
Renewed Facility Operating License No. DPR-16
NRC Docket No. 50-219

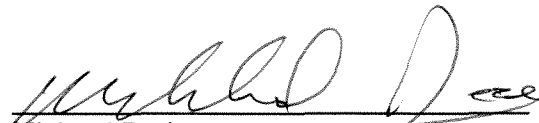
Subject: Submittal of Relief Requests for the Fifth Inservice Testing (IST) Interval

In accordance with 10 CFR 50.55a, "Codes and standards," paragraph (a)(3)(i), Exelon Generation Company, LLC (Exelon), is requesting relief from the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants associated with the Oyster Creek Nuclear Generating Station (OCNGS) fifth Inservice Testing (IST) interval. We request your approval by November 17, 2012.

There are no regulatory commitments in this letter.

If you have any questions concerning this letter, please contact Tom Loomis at (610) 765-5510.

Respectfully,



Michael D. Jesse
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachments: 1) Relief Request PR-01
2) Relief Request VR-01
3) Relief Request VR-02

cc: Regional Administrator, Region I, USNRC
USNRC Senior Resident Inspector, OCNGS
Project Manager [OCNGS] USNRC

Attachment 1
Relief Request PR-01

**Relief Request PR-01 Concerning the Proposed Use of Code Case OMN-18 in Accordance
with 10 CFR 50.55a(a)(3)(i)
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1.0 ASME Code Component(s) Affected

P-3-3A,B,C&D, Emergency Service Water Pumps (Vertical Line Shaft / Group AB / Class 3)
P-5-1&2, Reactor Building Closed Cooling Water Pumps (Centrifugal / Group A / Class 3)
P-11-1&2, Condensate Transfer Pumps (Centrifugal / Group A / Class 3)
P-18-1A&B, Spent Fuel Pool Cooling Pumps (Centrifugal / Group A / Class 3)
P-19-1A&B, Liquid Poison Pumps (Positive Displacement / Group AB / Class 2)
P-20-1A,B,C&D, Core Spray Pumps (Centrifugal / Group AB / Class 2)
P-20-2A,B,C&D, Core Spray Booster Pumps (Centrifugal / Group AB / Class 2)
P-21-1A,B,C&D, Containment Spray Pumps (Centrifugal / Group AB / (Class 2)

Component/System Function

Various, As Applicable

2.0 Applicable Code Edition and Addenda

The Oyster Creek Nuclear Generating Station (OCNGS) fifth Inservice Testing (IST) interval will comply with the ASME OM Code-2004 Edition, with Addenda through OMB-2006.

3.0 Applicable Code Requirement(s)

- o ISTB-3300, "Reference Values," states, in part, that "Reference values shall be established within ± 20 percent of pump design flow rate for the comprehensive test," and "reference values shall be established within ± 20 percent of pump design flow for the Group A and Group B tests, if practicable."
- o ISTB-3400, "Frequency of Inservice Tests," states that an inservice test shall be run on each pump as specified in Table ISTB-3400-1.
- o Table ISTB-3400-1 requires Group A and Group B tests to be performed quarterly and a comprehensive test to be performed biennially.
- o Table ISTB-3510-1, "Required Instrument Accuracy," specifies the instrument accuracies for Group A, Group B, comprehensive, and preservice tests.
- o Table ISTB-5121-1, "Centrifugal Pump Test Acceptance Criteria," defines the required acceptance criteria for Group A, Group B, and comprehensive tests for centrifugal pumps.
- o Table ISTB-5221-1, "Vertical Line Shaft Centrifugal Pump Test Acceptance Criteria," defines the required acceptance criteria for Group A, Group B, and comprehensive tests for Vertical Line Shaft centrifugal pumps.
- o Table ISTB-5321-2, "Reciprocating Positive Displacement Pump Test Acceptance Criteria," defines the required acceptance criteria for Group A, Group B, and comprehensive tests for Reciprocating Positive Displacement pumps.

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4.0 Reason for Request

The ASME Code committees have approved Code Case OMN-18, "Alternative Testing Requirements for Pumps Tested Quarterly within $\pm 20\%$ of Design Flow." This Code Case has not been approved for use in Regulatory Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," June 2003.

This Code Case allows the Owner to not perform the comprehensive test with the associated acceptance criteria, if the quarterly test is performed at $\pm 20\%$ of design flow and the instrumentation meets the accuracy requirements of Table ISTB-3510-1 for the comprehensive and preservice tests.

Further, ISTB allows the Owner to categorize the pumps in their program. As such, an Owner could categorize a pump that otherwise meets the requirements of Group B, as a Group A (or AB) pump, and test according to the provisions of Code Case OMN-18. However, in doing so they are obtaining additional data (vibration and flow or differential pressure) quarterly, rather than once every two years.

This would allow OCNGS to perform better trending of pump performance data due to the more consistent requirements for each of the quarterly tests. As a result of the increased requirements on the parameters imposed by the proposed alternative during applicable quarterly tests, there is no added value in performing the biennial comprehensive tests on the subject pumps.

5.0 Proposed Alternative and Basis for Use

OCNGS is proposing to utilize the provisions of Code Case OMN-18 and performing a modified Group A test in lieu of performing the Code-required Comprehensive Pump Test (CPT). The modified Group A will be run at $\pm 20\%$ of the pump's design flow rate using $\pm 1/2\%$ accurate gauges to determine the pump differential pressure. Vibration tests will be performed and the vibration acceptance criteria for the proposed alternative test will remain identical to the standard Group A test. Additionally, OCNGS will utilize a Required Action Range High limit of 106% or lower for quarterly testing, which is also consistent with the planned Code change applicable to CPT.

The tightened Required Action Range, in conjunction with using more accurate pressure instruments during testing, provides more consistent trend results when comparing subsequent tests. Due to the improved accuracy, consistent testing methodology, and the addition of quarterly vibration monitoring on Group AB pumps, deviations in actual pump performance indicative of impending degradation are more easily recognized during quarterly performance trending activities. Additionally, declaring pumps inoperable for reasons other than actual equipment degradation can be avoided.

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Using the provisions of this relief request as an alternative to the requirements of ISTB-3400 and Tables ISTB-5121-1, ISTB-5221-1, and ISTB-5321-2 provides a reasonable alternative to the Code requirements based on the determination that the proposed alternative provides an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), OCNCS requests relief from the specific ISTB requirements identified in this request.

6.0 Duration of Proposed Alternative

The proposed alternative identified in this relief request shall be utilized during the fifth IST interval which is scheduled to begin October 14, 2012 and conclude on October 13, 2022.

7.0 Precedents

A similar Relief Request (PR-9) was approved for the St. Lucie, Units 1 and 2 as discussed in the U.S. Nuclear Regulatory Commission Safety Evaluation Report dated July 1, 2011 (ML11143A077).

A similar Relief Request was approved for the Perry Nuclear Power Plant, Unit 1, as discussed in the U.S. Nuclear Regulatory Commission Safety Evaluation Report dated October 8, 2009 (ML092640690).

Attachment 2
Relief Request VR-01

**Relief Request VR-01 Concerning Relief Valve Testing in Accordance with 10 CFR
50.55a(a)(3)(i)
(Page 1 of 5)**

1.0 ASME Code Component(s) Affected

V-1-160, Main Steam Safety Valve (Class 1)
V-1-161, Main Steam Safety Valve (Class 1)
V-1-162, Main Steam Safety Valve (Class 1)
V-1-163, Main Steam Safety Valve (Class 1)
V-1-164, Main Steam Safety Valve (Class 1)
V-1-165, Main Steam Safety Valve (Class 1)
V-1-166, Main Steam Safety Valve (Class 1)
V-1-167, Main Steam Safety Valve (Class 1)
V-1-168, Main Steam Safety Valve (Class 1)

Component/System Function

The Main Steam Safety Valves (MSSVs) provide Reactor Pressure Vessel (RPV) overpressurization protection by opening at their designated set point. Per Technical Specification 4.3.E, four (4) of the valves have a designated set point of 1212 ± 36 psig and the remaining five (5) valves have a designated set point of 1221 ± 36 psig.

2.0 Applicable Code Edition and Addenda

The Oyster Creek Nuclear Generating Station (OCNGS) fifth Inservice Testing (IST) interval will comply with the ASME OM Code-2004 Edition, with Addenda through OMB-2006.

3.0 Applicable Code Requirement(s)

Appendix I, Paragraph I-1320(a), "5-Year Test Interval," specifies that Class 1 pressure relief valves shall be tested at least once every 5 years, starting with initial electric power generation. No maximum limit is specified for the number of valves to be tested within each interval; however, a minimum of 20% of the valves from each valve group shall be tested within any 24-month interval. This 20% shall consist of valves that have not been tested during the current 5-year interval, if they exist. The test interval for any individual valve shall not exceed 5 years.

4.0 Reason for Request

The ASME Code committees developed Code Case OMN-17, "Alternative Rules for Testing ASME Class 1 Pressure Relief/Safety Valves." OMN-17 was recently published in the 2009 Edition of the ASME OM Code. OMN-17 allows owners to extend the test interval for Class 1 safety and relief valves from 60 months to 72 months plus a 6-month grace period.

OCNGS has transitioned from an 18-month fuel cycle to a 24-month fuel cycle. Prior to transitioning to the 24-month fuel cycle, ASME Code requirements could be satisfied by removing and testing one-third of the 9 main steam safety valves each refueling outage in order to comply with the 5-year test interval requirements for Class 1 pressure relief valves imposed by the Code of Record during that time. Since transitioning to the 24-month fuel cycle, OCNGS normally removes approximately one-half of the subject relief valves each refueling outage for off-site testing.

The removal of half of the 9 valves versus a third of the valves each outage requires the removal of additional insulation, instrumentation, and other interferences. This additional work results in an undesirable increase in radiation exposure to maintenance personnel. Extending the test interval to 6 years would reduce the minimum number of MSSVs tested over three refueling outages by up to five valves. The MSSVs are located in the upper elevations of the drywell. Reducing MSSV testing results in lower radiation exposure and a reduction in the cost for valve replacements.

5.0 Proposed Alternative and Basis for Use

As an alternative to the Code required 60 month test interval per Appendix I, Paragraph I-1320(a), OCNGS proposes that the subject Class 1 pressure relief valves be tested at least once every 72 months plus a six month grace period, if required, in accordance with ASME OM Code Case OMN-17 with a minimum of 20% of the valves tested within any 24-month interval. This 20% would consist of valves that have not been tested during the current six year interval, if they exist. The test interval for any individual valve would not exceed 72 months plus a 6 month grace period to accommodate extended operating cycles.

The ASME Code committees developed Code Case OMN-17, "Alternative Rules for Testing ASME Class 1 Pressure Relief/Safety Valves." OMN-17 was recently published in the 2009 Edition of the ASME OM Code. This Code Case has not been approved for use in Regulatory Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," June 2003. OMN-17 allows owners to extend the test interval for Class 1 safety and relief valves from 60 months to 72 months plus a 6-month grace period. The Code Case imposes a special maintenance requirement to disassemble and inspect each safety and relief valve to verify that parts are free from defects resulting from time related degradation or service induced wear prior to the start of the extended test interval. The purpose of this maintenance is to reduce the potential for setpoint drift. The approved and qualified procedure that is used by the off-site vendor for disassembly, inspection, repair, and testing of the MSSVs satisfies this special maintenance requirement specified in OMN-17. All currently installed MSSVs were as-found tested, disassembled, inspected, and repaired, followed by post maintenance recertification in accordance with the qualified procedure, prior to installation to verify that parts were free from defects resulting from time related degradation or maintenance induced wear. Therefore, the currently installed MSSVs comply with OMN-17. Furthermore, each MSSV removed from service will

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continue to be disassembled, inspected, repaired, and tested in accordance with the qualified procedure and the requirements of OMN-17 prior to reinstallation.

OCNGS has a complement of 19 MSSVs of which nine are installed in the plant. The relief valve testing and maintenance cycle at OCNGS consists of removal of the MSSV complement requiring testing and transport to an off-site test facility. Upon receipt at the off-site facility the valves are subject to as-found inspection and set pressure testing. Prior to the return of a complement of MSSVs for installation in the plant, the valves are disassembled and inspected to verify that internal surfaces and parts are free from defects or service induced wear prior to the start of the next test interval. During this process, anomalies or damage are identified and dispositioned for resolution. Damaged or worn parts, springs, gaskets and seals are replaced as necessary. The valves are lubricated and the valve seats are relapped. Each valve is then recertified for service. Although the ASME Code does not require maintenance to be routinely performed on relief valves, maintenance prior to installation provides reasonable assurance that set pressure drift will be minimized.

OCNGS has reviewed the as-found set point testing results for all MSSVs tested since 1999 as detailed in the following summary of test results. OCNGS found that the average as-found set pressure is 1211.7 psig. OCNGS identified two (2) tests that exceeded the Technical Specifications as-found $\pm 3\%$ acceptance criteria.

1. MSSV BW05087 was as-found tested on 10/23/2000. The as-found set pressure of 1262 psig deviated from the set pressure of 1212 psig by 4.1%. Upon disassembly and inspection, the spindle was found out of round at the lower washer contact point by 0.034". The bent spindle was replaced. No other deficiencies were noted. Minor lapping was done to restore seat integrity. All other parts were cleaned, inspected, buffed and lubricated as required.
2. MSSV BY08715 was as-found tested on 8/10/2004. The as-found set pressure of 1268 psig deviated from the set pressure of 1221 psig by 3.8%. Upon disassembly and inspection contact between the spring and the spring can was noted. The can casting high spots were removed eliminating the contact points. The seats required minimal lapping. Wear areas were cleaned and wear areas and contact points were lubricated prior to assembly. The increase in as-found set pressure is attributed to the higher side loading caused by the spring contacting the side of the can.

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**SUMMARY OF TEST RESULTS
OYSTER CREEK MAIN STEAM SAFETY VALVES
(CONSOLIDATED/DRESSER MODEL 3777QA)**

VALVE ID	SET PRESSURE	AS-FOUND TEST DATE	AS FOUND SET PRESSURE	RESULT
BW05084	1212	6/2/1999	1218	0.5%
BW05085	1221	6/2/1999	1192	-2.4%
BW05086	1221	6/1/1999	1228	0.6%
BW05089	1212	6/2/1999	1203	-0.7%
BW05090	1212	6/1/1999	1204	-0.7%
BY08710	1212	6/2/1999	1194	-1.5%
BY08712	1221	6/3/1999	1204	-1.4%
BY08713	1221	6/1/1999	1220	-0.1%
BY08714	1221	6/1/1999	1231	0.8%
BW05087	1212	10/23/2000	1262	4.1% (1)
BW05088	1212	10/24/2000	1195	-1.4%
BW05091	1221	10/23/2000	1210	-0.9%
BW05092	1221	10/23/2000	1206	-1.2%
BY08708	1212	11/2/2000	1210	-0.2%
BY08711	1212	11/2/2000	1193	-1.6%
BY08715	1221	11/2/2000	1239	1.5%
BY08716	1221	11/3/2000	1211	-0.8%
BY08717	1221	10/23/2000	1201	-1.6%
BW05084	1212	10/13/2002	1241	2.4%
BY08710	1212	10/14/2002	1226	1.2%
BW05092	1221	8/9/2004	1215	-0.5%
BW08709	1212	8/13/2004	1220	0.7%
BY08715	1221	8/10/2004	1268	3.8% (2)
BY08714	1221	10/3/2005	1198	-1.9%
BW05089	1212	10/4/2005	1223	0.9%
BW05087	1212	10/4/2005	1182	-2.5%
BY08712	1221	10/5/2005	1212	-0.7%
BW05090	1212	10/5/2005	1206	-0.5%
BW05086	1221	10/6/2005	1212	-0.7%
BY08711	1212	10/6/2005	1213	0.1%
BY08713	1221	10/13/2005	1204	-1.4%
BY08709	1212	6/2/2006	1212	0.0%
BW05088	1212	10/27/2006	1183	-2.4%
BW05091	1221	10/27/2006	1196	-2.0%

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VALVE ID	SET PRESSURE	AS-FOUND TEST DATE	AS FOUND SET PRESSURE	RESULT
BW05084	1212	11/5/2008	1206	-0.5%
BY08708	1212	11/6/2008	1186	-2.1%
BY08715	1221	11/6/2008	1217	-0.3%
BY08716	1221	11/6/2008	1226	0.4%
BY08717	1221	11/6/2008	1201	-1.6%
BW05089	1212	11/18/2010	1204	-0.7%
BW05091	1221	11/18/2010	1195	-2.1%
BW05088	1212	11/18/2010	1222	0.8%
BW05085	1221	11/18/2010	1215	-0.5%

The OCNCS data indicates a slight tendency toward lower as-found set points, but this tendency is well within the OCNCS Technical Specification required limits, which require set point deviations to be within $\pm 3\%$.

The proposed alternative to increase the test interval for the subject Class 1 pressure relief valves from 60 months to 72 months plus a 6-month grace period will continue to provide an acceptable level of quality and safety while restoring the operational and maintenance flexibility that was lost when the 24-month fuel cycle created the unintended consequences of more frequent testing. This proposed alternative will continue to provide assurance of the valves' operational readiness and provides an acceptable level of quality and safety pursuant to 10 CFR 50.55a(a)(3)(i).

6.0 Duration of Proposed Alternative

The proposed alternative identified in this relief request shall be utilized during the fifth IST interval which is scheduled to begin October 14, 2012 and conclude on October 13, 2022.

7.0 Precedents

A similar Relief Request was approved for the Clinton Power Station, Unit No.1, as discussed in the U.S. Nuclear Regulatory Commission Safety Evaluation Report dated June 10, 2010 (ML101340691).

A similar Relief Request (VRR-06) was approved for the James A. Fitzpatrick Nuclear Power Plant as discussed in the U.S. Nuclear Regulatory Commission Safety Evaluation Report dated October 1, 2009 (ML092730032).

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Attachment 3
Relief Request VR-02

**Relief Request VR-02 Concerning Remote Position Indication for Containment Isolation
Valves in Accordance with 10 CFR 50.55a(a)(3)(i)
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1.0 ASME Code Component(s) Affected

The following containment isolation valves in various systems:

V-23-13	V-27-3
V-23-14	V-27-4
V-23-15	V-28-17
V-23-16	V-28-18
V-23-18	V-28-47
V-23-20	V-5-147
V-23-21	V-5-166
V-27-1	V-5-167
V-27-2	

Component/System Function

The valves must be capable of closing to provide containment isolation during post-accident conditions.

2.0 Applicable Code Edition and Addenda

The Oyster Creek Nuclear Generating Station (OCNGS) fifth Inservice Testing (IST) interval will comply with the ASME OM Code-2004 Edition, with Addenda through OMb-2006

3.0 Applicable Code Requirement(s)

OM Code ISTC-3700 - Valves with remote position indicators shall be observed locally at least once every two years to verify that valve operation is accurately indicated.

4.0 Reason for Request

The above valves are located in high radiation areas. Local observation to verify the accuracy of the position indicators will result in unnecessary radiation exposure to plant personnel. Without Code relief, the incremental outage work due to the inclusion of the 17 additional verifications of remote position indication would be contrary to the principle of maintaining exposure to radiation as low as reasonably achievable. Alternate means can be used to verify accurate valve position indication. As discussed in Section 4.2.7 of NUREG-1482, Rev.1, methods other than local observation, such as nonintrusive techniques, causing the flow to begin or cease, leak testing, and pressure testing can yield a positive indication of valve position. Observation of operational parameters such as leakage, pressure, and flow should be considered an acceptable approach since it is consistent with the intent of ISTC-3700.

5.0 Proposed Alternative and Basis for Use

The position indicators for the above valves will be verified at least once every 2 years. In lieu of local observation, the following method will be used to verify accurate position indication. Proper system operation will verify accurate open position indication, and successful leak rate test results each refueling outage will verify accurate closed indication. These containment isolation valves are not on an extended 10 CFR 50, Appendix J, Option B test frequency.

Using the provisions of this relief request as an alternative to local observation of valve position per ISTC-3700 is consistent with Section 4.2.7 of NUREG-1482, Rev.1 and provides an acceptable level of quality and safety without needlessly exposing plant personnel to high levels of radiation. Furthermore, using measurable system parameters to confirm valve position often provides better assurance of stem-disc integrity.

Similar relief requests have been previously submitted and approved for use in both the third and fourth IST intervals.

6.0 Duration of Proposed Alternative

The proposed alternative identified in this relief request shall be utilized during the fifth IST interval which is scheduled to begin October 14, 2012 and conclude on October 13, 2022.

7.0 Precedents

A similar relief request (Valve Relief Request No. 51) was approved for the Oyster Creek Nuclear Generating Station as discussed in the U.S. Nuclear Regulatory Commission Safety Evaluation Report dated September 24, 1992.

A similar Relief Request (RV-51) was approved for the Oyster Creek Nuclear Generating Station, as discussed in the U.S. Nuclear Regulatory Commission Safety Evaluation Report dated October 2, 2002 (ML022750556).

8.0 References

NUREG-1482, Revision 1, Section 4.2.7, "Verification of Remote Position Indication for Valves by Methods Other Than Direct Observation."