Exelon Generation

4300 Winfield Road
Warrenville, IL 60555
630 657 2000 Office

RS-12-155

10 CFR 50.55a

October 30, 2012

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

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Submittal of Relief Requests Associated with the Fifth Inservice Testing Interval

In accordance with 10 CFR 50.55a, "Codes and standards," paragraphs (a)(3)(i) and (a)(3)(ii), Exelon Generation Company, LLC (EGC), hereby requests NRC approval of the attached relief requests associated with the fifth inservice testing (IST) interval for Dresden Nuclear Power Station (DNPS), Units 2 and 3. The fifth interval of the DNPS, Units 2 and 3, IST Program will comply with the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (i.e., OM Code), 2004 Edition with addenda through OMb-2006. The latest edition and addenda of the code incorporated by reference in 10 CFR 50.55a(b)(3) is the 2004 Edition with addenda through 2006.

Proposed Relief Request No. RV-01 requests authorization to apply additional tolerances to the testing frequencies described in the ASME OM Code. Proposed Relief Request No. RV-02 requests authorization to use ASME Code Case OMN-1, Revision 1 for the testing of active, non-skid mounted, ASME Class 1, 2 and 3 motor-operated valves (MOVs) in the DNPS MOV testing program. Proposed Relief Request No. RV-02C would extend the 5-year IST frequency to a six-year IST frequency with allowance for an additional six-month grace period for the DNPS main steam safety valves. Proposed Relief Request No. RV-23H requests use of an alternate method High Pressure Coolant Injection system exhaust line drain valve testing. The bases for these relief requests are provided in Attachments 1, 2, 3, and 4, respectively.

EGC requests approval of these requests by October 30, 2013, to support implementation of the fifth 10-year IST interval which is currently scheduled to begin November 1, 2013.

There are no regulatory commitments contained within this letter.

Should you have any questions concerning this letter, please contact Mr. Mitchel A. Mathews at (630) 657-2819.

Sincerely,

Patrick R. Simpson
Manager – Licensing
Exelon Generation Company, LLC

Attachments:

1. 10 CFR 50.55a Request Number RV-01
2. 10 CFR 50.55a Request Number RV-02
3. 10 CFR 50.55a Request Number RV-02C
4. 10 CFR 50.55a Request Number RV-23H

ATTACHMENT 1
10 CFR 50.55a Request Number RV-01
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(ii)
--Hardship or Unusual Difficulty without Compensating Increase in Level of Quality and Safety--

1. ASME Code Component(s) Affected

All Pumps and Valves contained within the Dresden Nuclear Power Station (DNPS), Units 2 and 3 Inservice Testing (IST) Program scope.

2. Applicable Code Edition and Addenda

American Society of Mechanical Engineers (ASME), "Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code)," 2004 Edition with Addenda through 2006 (ASME OMb-2006)

3. Applicable Code Requirement(s)

This request applies to the frequency specifications of the ASME OM Code. The frequencies for tests given in the ASME OM Code do not include a tolerance band.

OM Code Section	Description
ISTA-3120(a)–	"The frequency for inservice testing shall be in accordance with the requirements of Section IST."
ISTB-3400–	Frequency of Inservice Tests; "An inservice test shall be run on each pump as specified in Table ISTB-3400-1" Table ISTB-3400-1 lists two frequencies – quarterly and biennially.
ISTC-3510–	Exercising Test Frequency; "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, . . . "
ISTC-3540–	Manual Valves
ISTC-3630(a)–	Frequency; "Tests shall be conducted at least once every 2 years."
ISTC-3700–	Position Verification Testing; "Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated. . . ."
ISTC-5221(c)(3)–	"At least one valve from each group shall be disassembled and examined at each refueling outage; all valves in a group shall be disassembled and examined at least once every 8 years."
Appendix I, I-1320(a) –	"5-Year Test Interval. Class 1 pressure relief valves shall be tested at least once every 5 years, . . ."
Appendix I, 1-1330–	Test Frequency, Class 1 Nonreclosing Pressure Relief Devices; "Class 1 nonreclosing pressure relief devices shall be replaced every 5 years . . ."
Appendix I, 1-1340–	Test Frequency, Class 1 Pressure Relief Valves that are used for Thermal Relief Application; Refers to I-1320 for test frequency.

ATTACHMENT 1
10 CFR 50.55a Request Number RV-01
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(ii)
--Hardship or Unusual Difficulty without Compensating Increase in Level of Quality and Safety--

OM Code Section	Description
Appendix I, 1-1350–	Test Frequency, Classes 2 and 3 Pressure Relief Valves; "Classes 2 and 3 pressure relief valves, with the exception of PWR main steam safety valves, shall be tested every 10 years, ..."
Appendix I, 1-1360–	Test Frequency, Classes 2 and 3 Nonreclosing Pressure Relief Devices; "Classes 2 and 3 nonreclosing pressure relief devices shall be replaced every 5 years, . . ."
Appendix I, 1-1370–	Test Frequency, Classes 2 and 3 Primary Containment Vacuum Relief Valves; "Tests shall be performed on all Classes 2 and 3 containment vacuum relief valves at each refueling outage or every 2 years, ..."
Appendix I, 1-1380–	Test Frequency, Classes 2 and 3 Vacuum Relief Valves Except for Primary Containment Vacuum Relief Valves; "All Classes 2 and 3 vacuum relief valves shall be tested every 2 years, . . ."
Appendix I, 1-1390–	Test Frequency, Classes 2 and 3 Pressure Relief Devices that are used for Thermal Relief Application; "Tests shall be performed on all Classes 2 and 3 relief devices used in thermal relief application every 10 years, . . . "
Appendix II, II-4000(a)(1)(e)–	Performance Improvement Activities; "Identify the interval of each activity."
Appendix II, II-4000(b)(1)(e)–	Optimization of Condition-Monitoring Activities; "Identify the interval of each activity. . . . "

ATTACHMENT 1
10 CFR 50.55a Request Number RV-01
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(ii)
--Hardship or Unusual Difficulty without Compensating Increase in Level of Quality and Safety--

4. **Reason for Request**

Pursuant to 10 CFR 50.55a(a)(3)(ii), an alternative is requested from the frequency specifications of the ASME OM Code. The basis of this request is that the Code requirements present an undue hardship without a compensating increase in the level of quality or safety.

ASME OM Code Section IST establishes the inservice test frequencies for all components within the scope of the Code. The frequencies (e.g., quarterly) have always been interpreted as "nominal" frequencies, generally as defined in Table 3.2 of NUREG 1482, Revision 1, and Owners routinely applied the surveillance extension time period (i.e., grace period) contained in the plant Technical Specifications (TS) Surveillance Requirements (SRs). The TS typically allow for a less than or equal to 25% extension of the surveillance test interval to accommodate plant conditions that may not be suitable for conducting the surveillance (i.e., SR 3.0.2). However, regulatory issues have been raised concerning the applicability of the TS "Grace Period" to ASME OM Code required inservice test frequencies irrespective of allowances provided under TS Administrative Controls (i.e., TS 5.5.6, "Inservice Testing Program," invokes SR 3.0.2 for various OM Code frequencies).

The lack of a tolerance band on the ASME OM Code inservice test frequencies restricts operational flexibility. There may be a conflict where a surveillance test could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after a plant condition or associated Limiting Condition for Operation (LCO) is within its applicability. Therefore, to avoid this conflict, the surveillance test should be performed when it can be and should be performed.

The NRC recognized this potential issue in the TS by allowing a frequency tolerance as described in TS SR 3.0.2. The lack of a similar tolerance applied to ASME OM Code testing places an unusual hardship on the plant to adequately schedule work tasks without operational flexibility.

Thus, just as with TS required surveillance testing, some tolerance is needed to allow adjusting OM Code testing intervals to suit the plant conditions and other maintenance and testing activities. This assures operational flexibility when scheduling surveillance tests that minimize the conflicts between the need to complete the surveillance and plant conditions.

ATTACHMENT 1
10 CFR 50.55a Request Number RV-01
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(ii)
--Hardship or Unusual Difficulty without Compensating Increase in Level of Quality and Safety--

5. Proposed Alternative and Basis for Use

ASME Section IST and earlier editions and addenda of the ASME OM Code specify component test frequencies that are based either on elapsed time periods (e.g., quarterly, 2 years, etc.) or on the occurrence of plant conditions or events (e.g., cold shutdown, refueling outage, upon detection of a sample failure, following maintenance, etc.).

a. Components whose test frequencies are based on elapsed time periods shall be tested at the frequencies specified in ASME OM Code Section IST with a specified time period between tests as shown in the table below.

Frequency	Specified Time Period Between Tests (all values are 'not to exceed'; no minimum periods are specified)
Quarterly (or every 3 months)	92 days
Semiannually (or every 6 months)	184 days
Annually (or every year)	366 days
x Years	x calendar years where 'x' is a whole number of years ≥ 2

The specified time period between tests may be reduced or extended as follows:

1) For periods specified as less than two (2) years, the period may be extended by up to 25% for any given test. This is consistent with DNPS TS 5.5.6, "Inservice Testing Program."
2) For periods specified as greater than or equal to two (2) years, the period may be extended by up to six (6) months for any given test.
3) All periods specified may be reduced at the discretion of the owner (i.e., there is no minimum period requirement).

Period extensions facilitate test scheduling and consider plant operating conditions that may not be suitable for performance of the required testing (e.g., performance of the test would cause an unacceptable increase in the plant risk profile due to transient conditions or other ongoing surveillance, test or maintenance activities). Period extensions are not intended to be used repeatedly merely as an operational convenience to extend test intervals beyond those specified.

Period extensions may also be applied to accelerated test frequencies (e.g., pumps in Alert Range) and other less than two-year test frequencies not specified in the table below.

Period extensions may not be applied to the test frequency requirements specified in Subsection ISTD, Preservice and Inservice Examination and Testing of Dynamic Restraints (i.e., snubbers) in Light-Water Reactor Nuclear Power Plants, as Subsection ISTD contains its own rules for period extensions.

b. Components whose test frequencies are based on the occurrence of plant conditions or events may not have their period between tests extended except as allowed by the ASME Code 2004 Edition with Addenda through OMb-2006 and earlier editions and addenda of the ASME OM Code.

Previous versions of the ASME Code and the current DNPS TS provide operational flexibility for the performance of ASME OM Code testing. As currently written, ASME OM Code requirements do not allow testing period extensions that provide an allowance for operational flexibility for the performance of ASME OM Code testing. As a result, this places an unusual hardship on DNPS's ability to schedule and perform ASME OM Code testing without a compensating increase in the level of quality and safety.

6. Duration of Proposed Alternative

The proposed alternative identified will be utilized during the fifth IST interval which is scheduled to begin November 1, 2013, and conclude on October 31, 2023.

7. Precedents

Generic relief has not been specifically granted to apply a tolerance band to the ASME OM code required test frequencies. The NRC has previously accepted the application of TS SR 3.0.2 tolerances to selected OM Code frequencies as denoted in TS 5.5.6.

The prior NRC acceptance of the practice of applying TS tolerances to ASME OM code required test frequencies provides equivalent precedent for accepting and approving this relief request.

ATTACHMENT 2
10 CFR 50.55a Request Number RV-02
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(i)
--Alternative Provides Acceptable Level of Quality and Safety--

1. ASME Code Component(s) Affected

All Dresden Nuclear Power Station (DNPS) motor-operated valves (MOVs) scoped into the Inservice Testing Program that are also included in the scope of the DNPS MOV Testing Program.

2. Applicable Code Edition and Addenda

ASME OM Code-2004 Edition, with Addenda through OMb-2006

3. Applicable Code Requirement(s)

- ISTC-3100, "Preservice Testing" subparagraph (a) states: "Any valve that has undergone maintenance that could affect its performance after the preservice test shall be tested in accordance with ISTC-3310."

- ISTC-3310, "Effects of Valve Repair, Replacement, or Maintenance on Reference Values" states in part that "When a valve or its control system has been replaced, repaired, or has undergone maintenance that could affect the valve's performance, a new reference value shall be determined or the previous value reconfirmed by an inservice test..."

- ISTC-3510, "Exercising Test Frequency" states: "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, ..."

- ISTC-3521, "Category A and Category B Valves," specifies exercising requirements and states that Category A and B MOVs be exercised during cold shutdowns if it is not practicable to exercise the valves at power, or that active Category A and B MOVs be exercised during refueling outages if it is not practicable to exercise the valves during cold shutdowns.

- ISTC-3700, "Position Verification Testing," states that "Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated."

- ISTC-5120 "Motor-Operated Valves" in paragraphs ISTC-5121, "Valve Stroke Testing," ISTC-5122, "Stroke Test Acceptance Criteria," and ISTC-5123, "Stroke Test Corrective Action" specify requirements for stroke time testing MOVs when exercised in accordance with ISTC-3510.

4. Reason for Request

Pursuant to 10 CFR 50.55a(a)(3)(i), approval of an alternative is requested to the listed requirements of the OM Code. Section 4.2.5 "Alternatives to Stroke-Time Testing," of NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants," Revision 1,

recommends that licensees implement ASME Code Case OMN-1, "Alternative Rules for Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in LWR Power Plants," as accepted by the NRC (with certain conditions) in the regulations or Regulatory Guide (RG) 1.192, "Operation And Maintenance Code Case Acceptability, ASME OM Code," as an alternative to the MOV stroke-time testing requirements in Subsection ISTC of the OM Code. The periodic exercising and diagnostic testing requirements in Code Case OMN-1 provide an improved method for assessing the operational readiness of MOVs.

RG 1.192, states within Table 2, "Conditionally Acceptable OM Code Cases," that the alternative rules of ASME Code Case OMN-1, "Alternative Rules for Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in Light-Water Reactor Power Plants," Revision 0, when applied in conjunction with the provisions for leakage rate testing in ISTC-3600, may be applied with the following provisions:

1. The adequacy of the diagnostic test interval for each valve must be evaluated and adjusted as necessary but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of ASME Code Case OMN-1.

2. When extending the exercise test intervals for high risk MOVs beyond a quarterly frequency, licensees shall ensure that the potential increase in core damage frequency and risk associated with the extension is small and consistent with the intent of the Commission's Safety Goal Policy Statement.

3. When applying risk insights as part of the implementation of OMN-1, licensees must categorize MOVs according to their safety significance using the methodology described in Code Case OMN-3, "Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants," with the conditions discussed in this regulatory guide or use other MOV risk-ranking methodologies accepted by the NRC on a plant-specific or industry-wide basis with the conditions in the applicable safety evaluations.

Since RG 1.192 was last published, Code Case OMN-1 has been updated/modified to address and incorporate the RG 1.192 listed provisions. Code Case OMN-1 was revised in the OMb-2006 Addenda to the ASME OM Code-2004.

5. Proposed Alternative and Basis for Use

Exelon Generation Company, LLC (EGC) proposes to adopt the requirements of Code Case OMN-1 (as delineated in the OMb-2006 Addenda to the ASME OM Code-2004) at DNPS in lieu of the performance of stroke time testing and position indication testing as described by ASME OM Code-2004 through OMb-2006 Addenda ISTC paragraphs listed above. DNPS will implement the Code Case in conjunction with the provisions for leakage rate testing in ISTC-3600. The provision to allow for motor control center testing, as contained in Section 6.1 of Code Case OMN-1, is excluded from this request.

ATTACHMENT 2
10 CFR 50.55a Request Number RV-02
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(i)
--Alternative Provides Acceptable Level of Quality and Safety--

The DNPS MOV testing program was developed as a result of NRC Generic Letter (GL) 89-10, "Safety Related Motor Operated Valve Testing and Surveillance," and GL 96-05, "Periodic Verification of Design Basis Capability of Safety Related Motor Operated Valves," utilizing Topical Report MPR-1 807, "Joint BWR, Westinghouse and Combustion Engineering Owners' Group Program on Motor-Operated Valve (MOV) Periodic Verification," Revision 2. DNPS is currently utilizing MPR-2524-A, "Joint Owners' Group (JOG) Motor Operated Valve Periodic Verification Program Summary," (November 2006) as guidance for the MOV Program. The adoption of Code Case OMN-1 will consolidate testing between the station's IST and MOV Programs.
The following positions describe how EGC interprets and complies with the various requirements of Code Case OMN-1 (ASME OMb-2006 Addenda version).

1. Section 3.1 allows for the use of testing that was conducted prior to the implementation of Code Case OMN-1 if it meets the requirements of the Code Case. EGC intends to utilize the testing credited under its GL 89-10/96-05 responses to satisfy the requirement for a one-time test to verify the capacity of each individual or group of MOV's safety-related design basis requirements.

2. Section 3.2 requires that each MOV be tested during the preservice test period or before implementing inservice testing. EGC intends to utilize the testing credited under its GL 96-05 response to satisfy this requirement.

3. OMN-1, Section 3.3(b) states that inservice tests shall be conducted in the as-found condition, and activities shall not be conducted if they might invalidate the as-found condition for inservice testing. EGC maintenance activities that would affect the as-found condition of the valve, such as motor operator preventive maintenance or stem lubrication, are typically scheduled to occur in conjunction with the performance of the MOV Periodic Verification Testing, and are performed after as-found testing. Any other activities that could affect the as-found test results are not performed until after the as-found testing has been conducted.

4. Section 3.3(c) requires the inservice testing program to include a mix of static and dynamic MOV performance testing. EGC has utilized the JOG program's mix of static and dynamic MOV performance testing (i.e., MPR- 2524-A) to develop its current MOV testing program. Additionally, EGC will continue to utilize the existing engineering standards, which are consistent with the JOG standards, to justify any changes to the mix of required MOV performance testing. The use of such an evaluation will serve to ensure EGC continues to meet this requirement.

5. Section 3.3(e) requires that remote position indication shall be verified locally during inservice testing or maintenance activities. EGC will continue to verify the operability of each MOV's position indication system as part of each MOV's diagnostic test. In addition, the function of each MOV's position indication system will be verified during the performance of maintenance activities affecting remote position indication.

6. Section 3.3.1(b) requires MOV inservice testing to be conducted every two refueling cycles or three years, whichever is longer, if insufficient data exists to determine inservice test intervals. EGC has sufficient MOV testing data to justify its current

testing intervals, and therefore meets this requirement. If in the future, modification or replacement results in the necessity to re-baseline a valve or group of valves, the requirements of OMN-1, Section 3.3.1(b) or 3.7.2.2(c) as applicable, will be followed.

7. Section 6.4.4 requires that calculations for determining the MOV's functional margin are evaluated to account for potential performance-related degradation. The DNPS MOV Program, including EGC's Motor Operated Valve Design Database (MIDAS) Software, or similar updated product, takes into account performance-related degradation, to calculate valve margin.

Using the provisions of this request as an alternative to the listed requirements of ISTC provides a reasonable alternative to the Code requirements based on the determination that the proposed alternative will provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), EGC requests approval of this alternative to the specific ISTC requirements identified in this request.

6. Duration of Proposed Alternative

The proposed alternative identified will be utilized during the fifth IST interval which is scheduled to begin November 1, 2013, and conclude on October 31, 2023.

7. Precedents

A similar request (i.e., No. 2201) was approved for the Clinton Power Station, Unit 1 (NRC Docket No. 50-461), as discussed in the NRC Safety Evaluation (SE) dated June 10, 2010 (TAC NO. ME1546).

A similar request (i.e., GVRR-1) was approved for the Peach Bottom Atomic Power Station, Units 2 and 3 (NRC Docket Nos. 50-277 and 50-278), as discussed in the NRC SE dated September 3, 2008 (TAC NOS. MD7461 and MD7462).

A similar request (i.e., RV-02) was approved for the LaSalle County Station (NRC Docket Nos. 50-373 and 50-374), as discussed in the NRC SE dated September 26, 2007 (TAC NOS. MD5992 and MD5995).

ATTACHMENT 3
10 CFR 50.55a Request Number RV-02C
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(ii)
--Hardship or Unusual Difficulty without Compensating Increase in Level of Quality and Safety--

1. ASME Code Components Affected

Valve Number	Class	Category	Description
2-0203-4A	1	C	Main Steam Safety Valve (MSSV)
2-0203-4B	1	C	MSSV
2-0203-4C	1	C	MSSV
2-0203-4D	1	C	MSSV
2-0203-4E	1	C	MSSV
2-0203-4F	1	C	MSSV
2-0203-4G	1	C	MSSV
2-0203-4H	1	C	MSSV
3-0203-4A	1	C	MSSV
3-0203-4B	1	C	MSSV
3-0203-4C	1	C	MSSV
3-0203-4D	1	C	MSSV
3-0203-4E	1	C	MSSV
3-0203-4F	1	C	MSSV
3-0203-4G	1	C	MSSV
3-0203-4H	1	C	MSSV

2. Applicable Code Edition and Addenda

ASME OM Code-2004 Edition, with Addenda through OMb-2006

3. Applicable Code Requirement

ASME OM Code Mandatory Appendix I, "Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants," Section I-1320, "Test Frequencies, Class 1 Pressure Relief Valves," paragraph (a), "5-Year Test Interval." states that Class 1 pressure relief valves shall be tested as least once every 5 years.

4. Reason for Request

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 2004 Edition through 2006 Addenda of the ASME OM Code is utilized at Dresden Nuclear Power Station (DNPS), Units 2 and 3.

Section ISTC-3200, "Inservice Testing," states that inservice testing shall commence when the valves are required to be operable to fulfill their required function(s). Section ISTC-5240, "Safety and Relief Valves," directs that safety and relief valves meet the inservice testing (IST) requirements set forth in Appendix I of the ASME OM Code. Appendix I, Section I-1320(a) of the ASME OM Code states that Class 1 pressure relief

valves shall be tested at least once every five years, starting with initial electric power generation. This section also states a minimum of 20 percent of the pressure relief valves are tested within any 24 month interval and that the test interval for any individual valve shall not exceed five years. The required test ensures that the MSSVs, 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 assumed in the safety analysis.

The Dresser Model 3777Q MSSVs have shown acceptable test history at both DNPS and Quad Cities Nuclear Power Station (QCNPS), as described in Section 5 below. However, given the current 24-month operating cycle for each DNPS unit, Exelon Generation Company (EGC), LLC is required to remove and test fifty percent (four of eight) MSSVs every refueling outage, so that all valves are removed and tested every two refueling outages. This ensures compliance with the ASME OM Code requirements for testing Class 1 pressure relief valves within a five year interval. Approval of extending the test interval to 6.5 years would reduce the minimum number of MSSVs tested at DNPS over three refueling outages (i.e., 24 month cycles at DNPS) by four MSSVs per unit.

Without Code relief, the incremental outage work due to the inclusion of the four additional MSSVs would be contrary to the principles of as low as reasonably achievable (ALARA), in that the removal and replacement of the four MSSVs over three refueling outages per unit will result in approximately eight additional person-rem of cumulative radiation exposure. This additional cumulative radiation exposure represents a hardship for DNPS without a compensating increase in the level of quality or safety.

In accordance with 10 CFR 50.55a(a)(3)(ii), EGC requests approval of an alternative to the five year test interval requirements of ASME OM Code, Appendix I, Section I-1320(a) for the Dresser Model 3777Q MSSVs at DNPS Units 2 and 3. EGC requests that the test interval be increased from five years to 6.5 years. All other requirements of the applicable ASME OM Code would be met. Compliance with the applicable requirements of the ASME OM Code for these MSSVs results in hardship due to unnecessary personnel radiation exposure without a compensating increase in the level of quality or safety.

5. Proposed Alternative and Basis for Use

Since DNPS operates on a 24-month refueling outage cycle, EGC proposes that the DNPS ASME Class 1 pressure relief valves (i.e., Dresser Model 3777Q MSSVs) be tested at least once every 6.5 years (i.e., six years with a grace period of 6 months). A minimum of 20% of the pressure relief valves will be tested within any 24-month interval and that this 20% shall consist of valves that have not been tested during the current 6.5 year interval, if they exist. The test interval for any individual valve shall not exceed 6.5 years. This alternative is consistent with the alternative provided in ASME Code Case OMN-17, "Alternative Rules for Testing ASME Class 1 Pressure Relief /Safety Valves," Section 1, 'Test Frequencies, Class 1 Pressure Relief Valves," Paragraph (a) "72-month Test Interval."

ATTACHMENT 3
10 CFR 50.55a Request Number RV-02C
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(ii)
--Hardship or Unusual Difficulty without Compensating Increase in Level of Quality and Safety--

Paragraph (b) of Code Case OMN-17 states:

(b) Replacement With Pretested Valves. The Owner may satisfy testing requirements by installing pretested valves to replace valves that have been in service, provided that

(1) for replacement of a partial complement of valves, the valves removed from service shall be tested prior to resumption of electric power generation and shall be subjected to the maintenance specified in subpara. (d); or

(2) for replacement of a full complement of valves, the valves removed from service shall be tested within 24 mo of removal from the system.

EGC removes a partial complement of MSSVs each DNPS refueling outage and ships them to an ASME OM Code-certified vendor to perform as-found testing prior to resumption of electric power generation. The vendor also performs the inspection, refurbishment, and as-left testing that meet the maintenance requirements specified in subparagraph (d) of OMN-17. For these reasons, the proposed alternative complies with paragraph (b) of Code Case OMN-17.

Basis for Use

All MSSVs, as well as the Electromatic relief valves (ERVs) and the Target Rock safety relief valve (SRV), are on the second elevation of the drywell. The major contributor to radiation exposure on the first and second elevations of the drywell is the Reactor Recirculation system, for which permanent shielding has been installed. However, other systems on the second elevation of the drywell also contribute to radiation exposure. These systems include Reactor Water Cleanup, Shutdown Cooling, and the Isolation Condenser.

Removal of an installed MSSV and installation of a replacement MSSV requires removal of insulation and appurtenances on the MSSV and unbolting the MSSV. Once unbolted, the MSSV is maneuvered from its location and lowered to the first elevation. Due to the highly congested configuration of the General Electric Mark I containment at DNPS, this evolution requires construction and demobilization of additional rigging. Based upon the size of the valves, a crew of five to seven personnel is necessary to safely move each valve.

ATTACHMENT 3
10 CFR 50.55a Request Number RV-02C
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(ii)
--Hardship or Unusual Difficulty without Compensating Increase in Level of Quality and Safety--

Historical cumulative radiation exposure at DNPS for removal and replacement of safety and relief valves from eleven recent DNPS refueling outages (i.e., four MSSVs, two ERVs, and one SRV each refueling outage) is described in Table 1.

TABLE 1: Cumulative Radiation Exposure for MSSV Replacement

Outage	Number of Valves Replaced	Cumulative Radiation Exposure (rem)
D3R17	7	5.0
D3R18	7	10.4
D3R19	7	23.2
D3R20	6	4.5
D3R21	5	4.5
D2R17	7	10.6
D2R18	7	16.0
D2R19	7	12.6
D2R20	7	6.7
D2R21	6	8
D2R22	5	4.6

This data indicates that the cumulative radiation exposure to replace an MSSV could range from approximately one (1) rem to three (3) rem per valve. The outage-specific variability of cumulative radiation exposure is attributed to the location of a particular valve relative to radiation hot spots, the physical configuration of surrounding equipment for a particular valve, and the impact of outage-specific plant configurations. Due to the dynamic nature of refueling outages, the combinations of these factors for refueling outages vary significantly. EGC estimates that the cumulative radiation exposure to remove and replace a single MSSV is approximately two person-rem. Therefore, absent the requested relief, replacement of four incremental MSSVs would result in approximately eight additional person-rem over three refueling outages per unit, without a compensating increase in the level of quality or safety.

IST history for the Dresser Model 3777Q MSSVs at DNPS from May 1997 to the present indicates that all tested MSSVs (i.e., 58 MSSV tests) that have been installed in either DNPS Unit 2 or Unit 3 for two operating cycles have successfully passed the ASME OM Code and Technical Specification (TS) as-found lift setpoint acceptance criteria within plus or minus 3%.

This historical DNPS test data is consistent with the reliable and consistent performance of the Dresser Model 3777Q MSSVs at QCNPS, Units 1 and 2, which are tested and refurbished at the same facility, using the same techniques and processes. Since 1997, EGC has collected and documented 128 as-found Model 3777Q test results from both DNPS and QCNPS. This test data indicates that all MSSV test results (i.e., Dresser Model 3777Q valves) are within the ASME acceptance criteria of plus or minus 3%. MSSV performance data prior to 1997 is not indicative of current MSSV performance; therefore, it was not considered. This is due to the fact that changes in refurbishment

methods, testing methods, and improvements in main steam system vibration reduction have since improved MSSV performance.

In addition to the historical test results, the current DNPS reload ASME overpressure analyses for both units assume that only eight of nine MSSVs are operable, and all of the operable MSSVs open to relieve pressure at the upper ASME limit of plus 3% of the MSSV set-point. These conservative assumptions provide additional assurance that the requested relief from the ASME OM Code requirement would not result in a decrease in the level of quality or safety.

Additionally, an EGC-approved and qualified procedure is used for disassembly and inspection of the MSSVs. This procedure requires that each MSSV be disassembled and inspected upon removal from service, 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. All parts that are defective, outside-of-tolerance, and all reworked/replaced components are identified, and EGC is notified of these components by the off-site vendor. The MSSV is then re-assembled, the as-left test is performed, and the MSSV is returned to DNPS.

Based upon the estimated cumulative radiation exposure to comply with the ASME OM Code, coupled with historical MSSV test results for Dresser Model 3777Q MSSVs at DNPS and QCNPS, EGC has concluded that compliance with the ASME OM Code would result in a hardship, without a compensating increase in the level of quality or safety.

6. Duration of Proposed Alternative

The proposed alternative identified will be utilized during the fifth IST interval which is scheduled to begin November 1, 2013, and conclude on October 31, 2023.

7. Precedents

This relief request (RV-02C) was previously approved for Dresden Nuclear Power Station, Units 2 and 3 for the 4th Ten Year Interval by NRC Safety Evaluation Report dated – June 27, 2008. (TAC Nos. MD8150 and MD8151)

A similar request (RR-02) was approved for the Susquehanna Steam Electric Station Units 1 and 2 (NRC Docket Nos. 50-387 and 50-388), as discussed in the U.S. Nuclear Regulatory Commission Safety Evaluation Report dated March 10, 2005 (TAC Nos. MC3383 and MC3387).

ATTACHMENT 4
10 CFR 50.55a Request Number RV-23H
Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(ii)
--Hardship or Unusual Difficulty without Compensating Increase in Level of Quality and Safety--

1. **ASME Code Components Affected**

VALVE	SIZE (inches)	CATEGORY	CODE CLASS	P&ID / Coordinate	FUNCTION
2-2301-32	1	B	2	M-51/C7	High Pressure Coolant Injection (HPCI) Drain Pot Solenoid
3-2301-32	1	B	2	M-374/C7	HPCI Drain Pot Solenoid

2. **Applicable Code Edition and Addenda**

ASME OM Code-2004 Edition, with Addenda through OMb-2006

3. **Applicable Code Requirement**

ISTC-3300 Reference Values:
"Reference values shall be determined from the results of preservice testing or from the results of inservice testing."

ISTC-3310 Effects of Valve Repair, Replacement, or Maintenance on Reference Values:
"When a valve or its control system has been replaced, repaired, or has undergone maintenance that could affect the valve's performance, a new reference value shall be determined or the previous value reconfirmed..."

ISTC-5151 Valve Stroke Testing:
(a) Active valves shall have their stroke times measured when exercised in accordance with ISTC-3500.
(b) The limiting value(s) of full-stroke time of each valve shall be specified by the Owner.
(c) Stroke time shall be measured to at least the nearest second.

ISTC-5152 Stroke Test Acceptance Criteria:
"Test results shall be compared to reference values established in accordance with ISTC-3300, ISTC-3310, or ISTC-3320."

4. **Reason for Request**

These valves are equipped with hand switches to enable remote manual operation from the control room; however, they are not equipped with position indicators and the valves

are totally enclosed, so valve position cannot be verified by direct observation. Valve actuation may be indirectly verified by removing the HPCI system from service, filling the drain pot with water until the high level alarm is received, and observing that the high level alarm clears. The time for the alarm to clear would depend primarily on variables such as the rate of filling and the level of the drain pot when the filling is secured. The steam line drain pot is not equipped with direct level indication; therefore, the time required for the alarm to clear may vary significantly and operation of valve 2301-32 cannot be verified by operation of the hand switch.

Compliance with the quarterly exercising and stroke timing requirements of the Code would require either system modifications to replace these valves with ones of testable design, or to purchase non-intrusive test equipment and develop new test methods and procedures.

Therefore, stroke timing these valves in accordance with Code requirements represents a hardship or unusual difficulty without a compensating increase in the level of quality or safety.

5. Proposed Alternative and Basis for Use

These valves will be exercised quarterly using the handswitch. They will also be functionally tested each refueling outage by filling the drain pot and verifying that valve 2301-32 actuates as indicated by the high level alarm clearing.

Additionally, maintenance activities will be instituted to compensate for testing deficiencies. The valves will be disassembled, examined and repaired or replaced every third cycle in addition to the above testing.

Basis for Use

These valves function as a backup to the exhaust line drain pot steam trap. During normal operation of the turbine using high quality steam, the drain path from the drain pot to the torus via the steam trap is adequate to remove condensate from the turbine exhaust line. However, during turbine operation with low pressure and low quality steam (which is seen during HPCI surveillance testing during plant startup and as would be expected during HPCI operation during a small break LOCA), condensate collects in the drain pot faster than it can be drained through the trap. Under these conditions, valve 2301-32 opens automatically to drain to the gland seal condenser upon receipt of a signal from a drain pot level switch when the drain pot level reaches the high level alarm setpoint. A high level condition sounds an alarm in the control room.

Failure of these valves to perform their safety function would be indicated by a drain pot high level alarm during operation with low pressure steam. Functional tests are conducted on the drain pot level alarm switches at least once each cycle to verify their operability. Additionally, condensate entrapped in the steam would cause significant fluctuations in exhaust steam header pressure.

Because exercising of these valves without stroke timing provides no measure of valve degradation, maintenance activities will be instituted to compensate for testing deficiencies. Following discussions with the manufacturer regarding valve design and application, it was decided to disassemble, examine and repair or replace these valves every third operating cycle.

Using the provisions of this request (i.e., quarterly exercising & functional test combined with the enhanced maintenance activities) as an alternative to the specific requirements of ISTC-5150 identified above will provide adequate indication of valve performance and continue to provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(ii) Exelon Generation Company, LLC requests approval of the alternative to the specific ISTC requirements identified in this request.

6. Duration of Proposed Alternative

The proposed alternative identified will be utilized during the fifth inservice testing (IST) interval which is scheduled to begin November 1, 2013, and conclude on October 31, 2023.

7. Precedents

This relief request (RV-23H) was previously approved for Dresden Nuclear Power Station Units 2 and 3 for the 4th Ten Year Interval by NRC Safety Evaluation (SE), dated October 2, 2003. (TAC Nos. TAC Nos. MB8741 through MB8746)

This relief request RV-23H was previously approved for Dresden Nuclear Power Station Units 2 and 3 for the 3rd Ten Year Interval by NRC SE dated April 6, 1996. (TAC Nos. M93566 and M93567)