



10 CFR 50.55a

OC-12-114

October 18, 2012

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 the Fifth Ten-Year Interval Inservice Testing Program Plan

In accordance with the ASME OM Code-2004 Edition, with Addenda through OMB-2006 (ISTA-3200(a)), attached for your information is a copy of the fifth ten-year interval Inservice Testing (IST) Program Plan for the Oyster Creek Nuclear Generating Station. The new interval will begin on October 14, 2012 and will conclude on October 13, 2022. This copy of the program plan is being supplied for information only.

There are no regulatory commitments contained within this letter.

If you have any questions or require additional information, please contact Tom Loomis (610-765-5510).

Sincerely,

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

Attachment: Oyster Creek Nuclear Generating Station Fifth Interval Inservice Testing (IST) Program Plan

cc: Regional Administrator, Region I, USNRC  
USNRC Senior Resident Inspector, TMI  
Project Manager, USNRC

Exelon Nuclear Generation, LLC  
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Oyster Creek Nuclear Generating Station  
Unit 1  
NRC Docket Number 50-219

Oyster Creek Generating Station  
Route 9, Lacey Township  
Forked River, New Jersey 08731

Commercial Service Date:  
December 8, 1969

# **Inservice Testing (IST) Program Program Plan**

**Fifth Ten-Year Interval**

**October 14, 2012 – October 13, 2022**

**Revision 20  
October 14, 2012**

**OYSTER CREEK NUCLEAR GENERATING STATION**  
**Inservice Testing Program Plan**  
**REVISION RECORD**

| Effective Date | Revision Description  | Sign & Date                       |   |   |
|----------------|---|-----------------------------------|---|---|
|                |   | Prepared:<br>Site IST<br>Engineer | Reviewed:<br>Corporate<br>IST<br>Engineer | Approved;<br>Engr.<br>Programs<br>Manager |
| 10/14/2012     | Revision 20:<br>Program revised in its entirety for fifth 10-year IST interval to comply with ASME OM Code-2004, including OMa Code-2005 and OMb Code-2006 addenda. | /s/ Z.<br>Demeke<br>10/11/12      | /s/ R.<br>Binz IV<br>10/11/12             | /s/ C.<br>Taylor<br>10/11/12              |
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**1.0 INTRODUCTION**

**1.1 Purpose**

The purpose of this Inservice Testing (IST) Program Plan is to provide a summary description of the Oyster Creek Unit 1 IST Program in order to document its compliance with the requirements of 10 CFR 50.55a(f) for the 5th 10-year IST interval.

**1.2 Scope**

This Inservice Testing Program Plan identifies all of the testing performed on the components included in the Oyster Creek Inservice Testing (IST) Program for the 5th ten-year IST interval, which will begin on October 14, 2012 and is scheduled to end on October 13, 2022. (Note: The Third Ten-Year Interval began on October 14, 1991, and concluded (with 1-year extension) on October 13, 2002. The Fourth Ten-Year Interval began on October 14, 2002, and will conclude on October 13, 2012.)

The Code of Federal Regulations, 10 CFR 50.55a(f)(4), requires that throughout the service life of a boiling or pressurized water-cooled nuclear power facility, pumps and valves which are classified as ASME Code Class 1, Class 2, and Class 3 must meet the inservice test requirements set forth in the ASME OM Code and addenda that are incorporated by reference in paragraph 10 CFR 50.55a(b)(3) for the initial and each subsequent 120-month interval.

Based on the start date identified above, the IST Program for the 5<sup>th</sup> ten-year interval is required by 10 CFR 50.55a(f)(4)(ii) to comply with the requirements of the ASME OM Code-2004, Code for Operation and Maintenance of Nuclear Power Plants, including addenda through the OMB-2006, except where relief from such requirements has been granted in writing by the NRC.

The scope of the OM Code is defined in paragraph ISTA-1100 as applying to:

- (a) pumps and valves that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident;
- (b) pressure relief devices that protect systems or portions of systems that perform on or more of the functions listed in (a), above; and
- (c) dynamic restraints (snubbers) used in systems that perform one or more of the functions listed in (a).

**NOTE:** This IST Program Plan addresses only those components included in (a) and (b) above. Dynamic restraints (snubbers) are addressed in a separate test program.

In order to determine the scope of the IST Program at Oyster Creek, an extensive scope evaluation was performed. This scope evaluation determined all of the functions required to be performed by all ASME Class 1, 2 and 3 systems in shutting down the reactor to the safe shutdown condition, in maintaining the safe shutdown condition or in mitigating the consequences of an accident. The determination of those functions was accomplished by a thorough review of licensing bases

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documents such as the UFSAR/FSAR, Plant Technical Specifications and Technical Specification Bases documents, etc.

As stated at the beginning of this Section, the scope of this IST Program Plan is to identify all of the testing performed on those components within the scope of the IST Program. This is accomplished primarily by means of the IST Pump and IST Valve Tables contained in Attachments 14 and 15. The remaining Sections and Attachments of this document provide support information to that contained in the Tables. Components that do not require testing are not included in the IST Program Plan document.

In addition to those components that are required to perform specific safety function(s), the scope evaluation often determines that there are also ASME Safety Class 1, 2 and 3 components that are not required to perform a licensing-based safety function but which, nonetheless, may be relied upon to operate to perform a function with some significance to safety. It may also identify non-ASME Safety Class pumps or valves that have a safety function or may be relied upon to operate to perform a function with some significance to safety. None of these components are required by 10 CFR 50.55a to be included in the IST Program. However, such components may require testing in a manner which demonstrates their ability to perform their functions commensurate with their importance to safety per the applicable portions of 10 CFR 50, Appendix A or B. One option is to include pumps or valves that fit these conditions in the IST Program as augmented components.

Oyster Creek is licensed with the Hot Standby condition as the safe shutdown condition. Therefore, the scope of the IST Program must include, as a minimum, all of those ASME Class 1, 2, and 3 pumps and valves which are required to shut down the Reactor to the Hot Standby condition, maintain the Hot Standby condition, or mitigate the consequences of an accident.

### 1.3 Discussion

A summary listing of all the pumps and valves that are tested in accordance with the IST Program is provided in the IST Pump and IST Valve Tables contained in Attachments 14 and 15. The Pump and Valve Tables also identify each test that is performed on each component, the frequency at which the test is performed, and any Relief Request or Technical Position applicable to the test. For valves, the Valve Table also identifies any Cold Shutdown Justification or Refueling Outage Justification that is applicable to the required exercise tests. Additional information is provided for both pumps and valves. All of the data fields included in the IST Pump and Valve Tables are listed and described in Sections 2 and 3 of this document.

Following Sections 2 and 3 are several Attachments which provide information referenced in the Pump and Valve Tables.

Attachment 1 includes a listing of P&ID's on which a depiction of the pump or valve may be located.

Attachment 2 provides an index of the Pump Relief Requests that apply to any of the pumps in the IST Program for this ten-year interval. Attachment 3 includes a copy of each of those Relief Requests.

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Attachment 4 provides an index of the Valve Relief Requests that apply to any of the valves in the IST Program for this ten-year interval. Attachment 5 includes a copy of each of those Relief Requests.

Attachment 6 contains the Safety Evaluation Report(s) (SER) that document approval of the Relief Requests contained in Attachments 3 and 5.

Attachment 7 includes a list of the ASME OM Code Cases that are being invoked for this ten-year interval.

Attachment 8 provides an index of Cold Shutdown Justifications that apply to the exercise testing of any valves in the IST Program for this ten-year interval. Attachment 9 includes a copy of each of those Cold Shutdown Justifications.

Attachment 10 provides an index of Refueling Outage Justifications that apply to the exercise testing of any valves in the IST Program for this ten-year interval. Attachment 11 includes a copy of each of those Refueling Outage Justifications.

Attachment 12 provides an index of Technical Positions that apply to the IST Program for this ten-year interval. Technical Positions provide detailed information regarding how Exelon satisfies certain ASME OM Code requirements, particularly when the Code requirement may be ambiguous or when multiple options for implementation may be available. Technical Positions do not take exception to or provide alternatives to Code requirements. Attachment 13 includes a copy of each Technical Position listed in Attachment 12.

As described previously, Attachments 14 and 15 include the IST Pump and Valve Tables.

Attachment 16 provides a listing of Check Valve Condition Monitoring (CVCMP) Program Plans. These condition monitoring plans are generated from information contained in the IST Program database - Inservice Testing Program Assistant (ISTPa-2003). Implementation and Maintenance of the Condition Monitoring Program is addressed in T&RM procedure ER-AA-321-1005, "Condition Monitoring for Inservice Testing of Check Valves.."

This IST Program Plan is a quality-related document and is controlled and maintained in accordance with approved Exelon Corporate Engineering and Records Management procedures.

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1.4 References

- 1.4.1 Title 10, Code of Federal Regulations, Part 50, Section 55a (10 CFR 50.55a)
- 1.4.2 ASME OM Code-2004, Code for Operation and Maintenance of Nuclear Power Plant Components, including Addenda through OMB-2006.
- 1.4.3 Oyster Creek Technical Specification and UFSAR.
- 1.4.4 Exelon Corporation Administrative Procedure ER-AA-321, Administrative Requirements for Inservice Testing



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**2.0 INSERVICE TESTING PLAN FOR PUMPS**

**2.1 Pump Inservice Testing Plan**

The Oyster Creek Inservice Testing Program for Pumps meets the requirements of Subsections ISTA and ISTB of the ASME OM Code-2004 with OMB-2006 addenda, with the exception of those specific applications identified in the Relief Requests contained in Attachment 3.

**2.2 IST Plan Pump Table Description**

The pumps included in the Oyster Creek Inservice Testing Program are listed in Attachment 14. The information contained in that table identifies those pumps required to be tested to the requirements of the ASME OM Code, the parameters measured, associated Relief Requests and comments, and other applicable information. The column headings for the Pump Table are listed below with an explanation of the content of each column.

Pump EPN                      The unique identification number for the pump, as designated on the System P&ID or Flow Diagram

Test Group                      The Group classification of the pump as defined in Reference 1.4.2 (or applicable Relief):  
    A – Group A  
    B – Group B  
    AB – Group B pump designated as Group A to qualify for OMN-18 applicability

Safety Class                      The ASME Safety Class (i.e., 1, 2 or 3) of the pump. Non-ASME Safety Class pumps are designated "N/A".

Pump Type                      An abbreviation used to designate the type of pump:  
    C      Centrifugal  
    PDN   Positive Displacement - Non-Reciprocating  
    PDR   Positive Displacement - Reciprocating  
    VLS   Vertical Line Shaft

Pump Driver                      The type of driver with which the pump is equipped:  
    A      Air-motor  
    D      Diesel  
    M      Motor (electric)  
    T      Turbine (steam)

P&ID                                      The Piping and Instrumentation Diagram or Flow Drawing on which the pump is shown

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|                         |  |
|-------------------------|--|
| <u>P&amp;ID Coord.</u>  | Coordinates on the P&ID or Flow Diagram where the pump is shown  |
| <u>Test Type</u>        | Lists each of the test parameters which are required to be measured for the specific pump. These include:<br>N Speed (for variable speed pumps, only)<br>$\Delta P$ Differential Pressure<br>P Discharge Pressure (positive displacement pumps)<br>Q Flow Rate<br>$V_d$ Vibration (displacement)<br>$V_v$ Vibration (velocity) |
| <u>Test Freq</u>        | An abbreviation which designates the frequency at which the associated test is performed:<br>Q Quarterly<br>Y2 Once every 2 years<br><br><b>NOTE:</b> All tests are performed at the frequencies specified by Code unless specifically documented by a Relief Request.   |
| <u>Relief Request</u>   | Identifies the number of the Relief Request applicable to the specified test.  |
| <u>Tech Pos</u>         | Provides the Technical Position identification number applicable to the pump or test.  |
| <u>Comments</u>         | Any appropriate reference or explanatory information (e.g., technical positions, etc.)   |
| <u>Pump Description</u> | The descriptive name of the pump shown on the bottom line for each pump entry.   |

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**3.0 INSERVICE TESTING PLAN FOR VALVES**

**3.1 Valve Inservice Testing Plan**

The Oyster Creek Inservice Testing Program for Valves meets the requirements of Subsections ISTA and ISTC of the ASME OM Code-2004 with Omb-2006 addenda, with the exception of those specific applications identified in the Relief Requests contained in Attachment 5.

**3.2 IST Plan Valve Table Description**

The valves included in the Oyster Creek Inservice Testing Program are listed in Attachment 15. The information contained in that table identifies those valves required to be tested to the requirements of the ASME OM Code, the testing methods and frequency of testing, associated Relief Requests, comments, and other applicable information. The column headings for the Valve Table are delineated below with an explanation of the content of each column.

Valve The unique identification number for the valve (Valve EIN), as designated on the System P&ID or Flow Diagram.

Safety Class The ASME Safety Class (i.e., 1, 2 or 3) of the valve. Non-ASME Safety Class valves are designated by "N/A".

Category The ASME Code category or categories of the valve as defined in Reference 1.4.2.

Size The nominal size of the valve in inches.

Valve Type An abbreviation used to designate the body style of the valve:

- 3W 3-Way
- 4W 4-Way
- BAL Ball
- BTF Butterfly
- CK Check
- DIA Diaphragm
- GA Gate
- GL Globe
- PLG Plug
- RPD Rupture Disk
- RV Relief
- SCK Stop-Check
- SHR Shear (SQUIB)
- XFC Excess Flow Check

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|                                     |   |
|-------------------------------------|---|
| <u>Act Type</u>                     | An abbreviation which designates the type of actuator on the valve. Abbreviations used are:<br>AO Air Operator<br>DF Dual Function (Self and Power)<br>EXP Explosive<br>HO Hydraulic Operator<br>M Manual<br>MO Motor Operator<br>SA Self-Actuating<br>SO Solenoid Operator   |
| <u>Active/Passive</u>               | “A” or “P”, used to designate whether the valve is active or passive in fulfillment of its safety function. The terms “active valves” and “passive valves” are defined in Reference 1.4.2.  |
| <u>Normal/Fail/Safety Positions</u> | Abbreviations used to identify the normal, fail, and safety-related positions for the valve. Abbreviations used are:<br>AI As Is<br>C Closed<br>LC Locked Closed<br>LO Locked Open<br>LT Locked Throttled<br>O Open<br>O/C Open or Closed<br>T Throttled  |
| <u>P&amp;ID</u>                     | The Piping and Instrumentation Diagram or Flow Drawing on which the valve is shown.   |
| <u>P&amp;ID Coord.</u>              | The Sheet number and coordinates on the P&ID or Flow Diagram where the valve is shown.  |
| <u>Test Type</u>                    | A listing of abbreviations used to designate the types of testing which are required to be performed on the valve based on its category and functional requirements. Abbreviations used are:<br>BDC Bidirectional Check Valve test (non-safety related closure test)<br>BDO Bidirectional Check Valve test (non-safety related open test)<br>CC <sup>2</sup> Check Valve Exercise Test - Closed<br>CO <sup>2</sup> Check Valve Exercise Test - Open<br>DT Category D Test<br>EC Exercise Test – Closed (manual valve) |

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|                 |                                       |
|-----------------|---------------------------------------|
| EO              | Exercise Test – Open (manual valve)   |
| FC              | Fail-Safe Exercise Test - Closed      |
| FO              | Fail-Safe Exercise Test - Open        |
| LT <sup>1</sup> | Leak Rate Test                        |
| PI              | Position Indication Verification Test |
| RT              | Relief Valve Test                     |
| SM              | Skid Mounted - CTP-IST-007            |
| SP              | Partial Exercise (Cat. A or B)        |
| STC             | Exercise/Stroke-Time Closed           |
| STO             | Exercise/Stroke-Time Open             |

<sup>1</sup> A third letter, following the “LT” designation for leakage rate test, may be used to differentiate between the tests. For example, Appendix J leak tests will be designated as “LTJ”, low pressure (non-Appendix J) leak tests as “LTL”, and high pressure leak tests as “LTH”.

<sup>2</sup> Three letter designations should be used for check valve tests to differentiate between the various methods of exercising check valves. The letter following “CC” or “CO” should be “A” for acoustics, “D” for disassembly and inspection, “F” for flow indication, “M” for magnetics, “R” for radiography, “U” for ultrasonics, or “X” for manual exercise.

Test Freq.

An abbreviation which designates the frequency at which the associated test is performed. Abbreviations used are:

|      |  |
|------|--|
| AJ   | Per Appendix J                               |
| CM   | Per Check Valve Condition Monitoring Program |
| CS   | Cold Shutdown                                |
| M[n] | Once Every <i>n</i> Months                   |
| OP   | Operational Frequency                        |
| Q    | Quarterly                                    |
| RR   | Refuel Outage                                |
| R[n] | Once Every <i>n</i> Refuel Outages           |
| SA   | Sample Disassemble & Inspect                 |
| TS   | Per Technical Specification Requirements     |
| Y[n] | Once Every <i>n</i> Years                    |

Relief Request

Identifies the number of the Relief Request applicable to the specified test.

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|                       |  |
|-----------------------|--|
| <u>Deferred Just.</u> | A cross-reference to the applicable Cold Shutdown Justification or Refuel Outage Justification which describes the reasons why reduced-frequency exercise testing is necessary for the applicable valve. |
| <u>Tech Pos.</u>      | Provides the Technical Position identification number applicable to the pump or test.  |
| <u>Comments</u>       | Any appropriate reference or explanatory information (e.g., technical positions, etc.).  |
| <u>Valve Name</u>     | The descriptive (noun) name for the valve  |

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**SECTION 4.0**  
**ATTACHMENTS**

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**ATTACHMENT 1**  
**SYSTEM AND P&ID LISTING**



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| <u>System Number</u> | <u>System Name</u>  | <u>P&amp;ID</u>   |
|----------------------|---|-------------------|
| 411 (01)             | Main Steam  | BR2002 Sh1        |
| 422 (02)             | Feedwater   | BR2003 Sh1        |
| 421 ((02)            | Condensate  | BR2004 Sh2        |
| 531 (03)             | Service Water   | BR2005 Sh 2       |
| 532 (03)             | Emergency Service Water   | BR2005 Sh 4       |
| 541 (05)             | Reactor Building Closed Cooling Water                           | BR2006 Sh 1       |
| 852 (06)             | Instrument Air  | BR2013 Sh 6       |
| 811 (09)             | Fire Protection   | BR2004 Sh 2       |
| 424 (11)             | Condensate Transfer   | BR2004 Sh 2       |
| 211 (14)             | Isolation Condenser   | GE148F262 Sh1     |
| 225 (15)             | Control Rod Drive   | GE 237E487        |
| 215 (16)             | Cleanup Demineralizer   | GE 148F444        |
| 214 (17)             | Shutdown Cooling  | GE 148F711        |
| 251 (18)             | Spent Fuel Pool Cooling (Including Augmented Fuel Pool Cooling) | GE 237E756 Sh1    |
| 213 (19)             | Standby Liquid Control (Liquid Poison)                          | GE 148E723 Sh1    |
| 212 (20)             | Core Spray and Auto-Depressurization                            | GE 885D781 Sh1    |
| 241 (21)             | Containment Spray   | GE 148F740 Sh1    |
| 573 (22)             | Drywell Floor and Equipment Drains                              | JC 147434 Sh2     |
| 242 (23)             | Containment Inerting  | SN 13432.19-1     |
| 551 (24)             | Reactor Sample  | BR-M0012 Sh1      |
| 243 (26)             | Drywell and Suppression   | GU3E-243-21-1000  |
| 822 (27)             | Reactor Building Ventilation                                    | BR-2011 Sh 2      |
| 822 (28)             | Reactor Building Ventilation                                    | BR-2011 Sh 2      |
| 216 (31)             | Reactor Head Cooling  | GE 237E478        |
| 223 (37)             | Recirculation   | GE 237E798        |
| 666 (38)             | Hydrogen and Oxygen Monitoring                                  | GU 3E 666 21 1000 |
| 555 (40)             | Post Accident Sampling  | BR M0012 Sh 1     |
| 622 (130)            | Reactor Plant Instrumentation                                   | GE 148F712        |
| 623 (623)            | Traveling Incore Probe  | GE 237E726 Sh1    |

NOTE: Numbers in parentheses ( ), in the "System Number" column are the unique system designators used in the individual component ID numbers.

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**ATTACHMENT 2**  
**PUMP RELIEF REQUEST INDEX**

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| <u>RELIEF REQUEST NUMBER</u> | <u>RELIEF REQUEST TITLE</u>   | <u>APPROVAL DATE</u> |
|------------------------------|---|----------------------|
| 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).   | June 21, 2012        |
|                              | Note: The ASME Code committee has approved Code Case OMN-18, "Alternate Testing Requirements for Pumps Tested Quarterly within $\pm$ 20% of Design Flow." However, 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 and therefore, requires NRC relief. |                      |
|                              | Correction to Relief and SER dated June 21, 2012<br>Oyster Creek Nuclear Generating station -<br>Correction to relief from the requirements of the ASME Code, Relief Request No. PR-01 for Fifth Inservice Testing interval (TAC No. ME7616)  | July 3, 2012         |

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**ATTACHMENT 3**  
**PUMP RELIEF REQUESTS**

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Title: Relief Request PR-01 Concerning the Proposed Use of Code Case OMN-18 in Accordance with 10 CFR 50.55a(a)(3)(i).

1. 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, RBCCW 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. Applicable Code Edition and Addenda

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

3. Applicable Code Requirement(s)

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

The ASME Code committees have approved Code Case OMN-18, Alternate 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 test on the subject pumps.

5. 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.

Using the provisions of this relief request as an alternative to the requirements of ISTB-3400 and Tables ISTB-5121-1, ISTB-5221-1, & 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), OCNGS requests relief from the specific ISTB requirements identified in this request.

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6. 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. 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).

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**ATTACHMENT 4**  
**VALVE RELIEF REQUEST INDEX**



OYSTER CREEK NUCLEAR GENERATING STATION  
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| <u>RELIEF REQUEST NUMBER</u> | <u>RELIEF REQUEST TITLE</u>   | <u>APPROVAL DATE</u> |
|------------------------------|---|----------------------|
| VR-01                        | <p>Relief Request VR-01 Concerning Relief Valve Testing in Accordance with 10 CFR 50.55a(a)(3)(i). (V-1-160, V-1-161, V-1-162, V-1-163, V-1-164, V-1-165, V-1-167, V-1-168)</p> <p>Relief requests the use of Code Case OMN-17.</p> <p><u>Note:</u> The ASME Code committee has approved 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. However, 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 and therefore, requires NRC relief.</p> | March 22, 2012       |
| VR-02                        | <p>Relief Request VR-02 Concerning Remote Position Indication for Containment Isolation Valves in Accordance with 10 CFR 50.55a(a)(3)(i). (V-23-13, V-23-14, V-23-15, V-23-16, V-23-18, V-23-20, V-23-21, V-27-1, V-27-2, V-27-3, V-27-4, V-28-17, V-28-18, V-28-47, V-5-147, V-5-166, V-5-167)</p> <p><u>Note:</u> This relief is a rewrite of RV-51 remote position indication verification of certain Containment Isolation Valves per ISTC-3700 that was approved for the fourth 10-year interval. It was resubmitted and approved for the fifth 10-year IST interval.</p>  | January 24, 2012     |

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**ATTACHMENT 5**  
**VALVE RELIEF REQUESTS**

OYSTER CREEK NUCLEAR GENERATING STATION  
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Title: **Relief Request VR-01** Concerning Relief Valve Testing in Accordance with 10 CFR 50.55a(a)(3)(i).

1. 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. Applicable Code Edition and Addenda

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

3. Applicable Code Requirement(s)

Appendix I, Paragraph I-1320(a), 5-Year Test Frequency, 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; 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. 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

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

cycle, OCNCS 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 replacement.

5. Proposed Alternative and Basis for Use

As an alternative to the Code required 60 month test interval per Appendix I, paragraph I-1320(a), OCNCS 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 (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 shutdown periods.

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

OCNCS has a compliment of 19 MSSVs of which nine are installed in the plant. The relief valve testing and maintenance cycle at OCNCS consists of removal of the MSSV compliment 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 compliment 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.

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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 set point 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 3.85%. 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

| VALVE ID | SET PRESSURE | AS-FOUND TEST DATE | AS FOUND SET PRESSURE | RESULT   |
|----------|--------------|--------------------|-----------------------|----------|
| BWO5084  | 1212         | 6/2/1999           | 1218                  | 0.5%     |
| BWO5085  | 1221         | 6/2/1999           | 1192                  | -2.4%    |
| BWO5086  | 1221         | 6/1/1999           | 1228                  | 0.6%     |
| BWO5089  | 1212         | 6/2/1999           | 1203                  | -0.7%    |
| BWO5090  | 1212         | 6/1/1999           | 1204                  | -0.7%    |
| BYO8710  | 1212         | 6/2/1999           | 1194                  | -1.5%    |
| BYO8712  | 1221         | 6/3/1999           | 1204                  | -1.4%    |
| BYO8713  | 1221         | 6/1/1999           | 1220                  | -0.1%    |
| BYO8714  | 1221         | 6/1/1999           | 1231                  | 0.8%     |
| BWO5087  | 1212         | 10/23/2000         | 1262                  | 4.1% (1) |
| BWO5088  | 1212         | 10/24/2000         | 1195                  | -1.4%    |
| BWO5091  | 1221         | 10/23/2000         | 1210                  | -0.9%    |
| BWO5092  | 1221         | 10/23/2000         | 1206                  | -1.2%    |
| BYO8708  | 1212         | 11/2/2000          | 1210                  | -0.2%    |
| BYO8711  | 1212         | 11/2/2000          | 1193                  | -1.6%    |
| BYO8715  | 1221         | 11/2/2000          | 1239                  | 1.5%     |
| BYO8716  | 1221         | 11/3/2000          | 1211                  | -0.8%    |
| BYO8717  | 1221         | 10/23/2000         | 1201                  | -1.6%    |
| BWO5084  | 1212         | 10/13/2002         | 1241                  | 2.4%     |
| BYO8710  | 1212         | 10/14/2002         | 1226                  | 1.2%     |
| BWO5092  | 1221         | 8/9/2004           | 1215                  | -0.5%    |
| BWO8709  | 1212         | 8/13/2004          | 1220                  | 0.7%     |
| BYO8715  | 1221         | 8/10/2004          | 1268                  | 3.8% (2) |
| BYO8714  | 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%    |
| BYO8709  | 1212         | 6/2/2006           | 1212                  | 0.0%     |
| BW05088  | 1212         | 10/27/2006         | 1183                  | -2.4%    |
| BW05091  | 1221         | 10/27/2006         | 1196                  | -2.0%    |
| 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%    |

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The OCNGS data indicates a slight tendency toward lower as-found set points, but this tendency is well within the OCNGS 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 would 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. 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. 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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Title: **Relief Request VR-02** Concerning Remote Position Indication for Containment Isolation Valves in Accordance with 10 CFR 50.55a(a)(3)(i).

1. 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. Applicable Code Edition and Addenda

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

3. 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. 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 fourteen 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.



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5. 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. 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. 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. References

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

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**ATTACHMENT 6**  
**RELIEF REQUEST RAIs AND SERs**

OYSTER CREEK NUCLEAR GENERATING STATION  
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**[SER Approval for Relief Request PR-01:]**

**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF, PR-01

FIFTH INSERVICE TESTING INTERVAL

OYSTER CREEK NUCLEAR GENERATING STATION

EXELON NUCLEAR

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated November 17, 2011 (Agencywide Documents and Access Management System Accession No. ML 113250626), Exelon Nuclear (Exelon or licensee) submitted relief request PR01 for Oyster Creek Nuclear Generating Station (OCNGS) during the fifth Inservice Testing (IST) interval, requesting the use of an alternative to certain requirements of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code).

The licensee proposed an alternative testing method and acceptance criteria for the following pumps:

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

The proposed alternative testing method and acceptance criteria will be used in lieu of the current pump testing method and acceptance criteria described in the ASME OM Code for OCNGS. Request PR-01 is applicable to the fifth (IST program interval for OCNGS.

Enclosure

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

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Specifically, pursuant to Title 10 of the *Code Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i), the licensee requested to use the proposed alternative on the basis that the alternative provides an acceptable level of quality and safety.

## 2.0 REGULATORY EVALUATION

10 CFR 50.55a(f), "Inservice Testing Requirements," requires, in part, that IST of certain ASME Code Class 1, 2, and 3 pumps and valves must meet the requirements of the ASME OM Code and applicable addenda, except where alternatives have been authorized by NRC pursuant to paragraph (a)(3)(i) or (a)(3)(ii).

In proposing alternatives, a licensee must demonstrate that the proposed alternatives provide an acceptable level of quality and safety (10 CFR 50.55a(a)(3)(i)) or compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety (10 CFR 50.55a(a)(3)(ii)). Section 50.55a allows the NRC to authorize alternatives to ASME OM Code requirements upon making necessary findings.

The OCNCS fifth ten-year IST program interval will begin on October 14, 2012, and end on October 13, 2022.

The NRC's findings with respect to authorizing the alternative PR-01 are given below:

## 3.0 TECHNICAL EVALUATION

### 3.1 Licensee's Alternative Request PR-01

ISTB-3300, "Reference Values," states, in part, that "Reference values shall be established within  $\pm 20$  percent of pump design flow rate for the comprehensive test," and "Reference values shall be established within  $\pm 20$  percent of pump design flow for the Group A and Group B tests, if practicable."

ISTB-3400, "Frequency of Inservice Tests," states that "An inservice test shall be run on each pump as specified in Table ISTB-3400-1."

Table ISTB-3400-1, "Inservice Test Frequency," specifies that Group A and Group B tests be performed quarterly and a comprehensive test be performed biennially for Group A and Group B pumps.

Table ISTB-351 0-1, "Required Instrument Accuracy," specifies the instrument accuracies for Group A, Group B, comprehensive, and preservice tests.

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.

Table ISTB-5221-1, "Vertical Line Shaft and Centrifugal Pumps Test Acceptance Criteria," defines the required acceptance criteria for Group A, Group B, and comprehensive tests for Vertical Line Shaft centrifugal pumps.

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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.

ASME OM Code Case OMN-18, "Alternative Testing Requirements for Pumps Tested Quarterly within  $\pm 20\%$  of Design Flow" states, in part, that, "the Group A test maybe performed quarterly within  $\pm 20\%$  of pump design flow rate, with instrumentation meeting the requirements of Table ISTB-3510-1 for the comprehensive and preservice tests, and no comprehensive test is required."

The applicable ASME OM Code edition and addenda for OCNCS is 2004 Edition with Addenda through Omb-2006.

Reason for Request

The licensee stated that:

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 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," June 2003.

This Code Case OMN-18 allows the Owner to not perform the comprehensive test (CPT) 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 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. By doing so they are obtaining additional data (vibration and flow or differential pressure) quarterly, rather than once every two years.

This would allow OCNCS 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.

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Proposed Alternative and Basis for Use

The licensee stated that:

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 CPT. The enhanced 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.

3.2 NRC Staff Evaluation

The licensee is proposing to perform a quarterly IST for all pumps listed in Section 1.0 in accordance with a modified Group A test procedure, in lieu of quarterly Group A tests and a CPT every two years.

The ASME OM Code requires that for Group A pumps, a Group A test be performed every quarter, and a CPT be performed biennially. The Group A test is performed within  $\pm 20\%$  of the pump design flow rate and the pressure instrument accuracy is  $\pm 2\%$ . The upper limit for the "Acceptable Range" for flow rate and differential pressure is 110% of the reference values, and the high value for the "Required Action Range" for flow rate and differential pressure is greater than 110% of the reference values. The CPT is performed within  $\pm 20\%$  of the pump design flow rate, the pressure instrument accuracy is  $\pm 1/2\%$ , and the high value of "Required Action Range" is greater than 103% of the respective reference values. Vibration monitoring is performed during both the Group A tests and the CPTs.

The licensee proposes that for the pumps listed in Section 1.0 above, a modified Group A quarterly test will be performed using ASME OM Code Case OMN-18, with modified "Required Action" ranges, and the biennial comprehensive test will not be performed. The modified Group A quarterly test would be performed within  $\pm 20\%$  of the pump design flow rate, using more accurate pressure instrumentation (i.e. instrument accuracy required for a CPT ( $\pm 1/2\%$  instead of  $\pm 2\%$ )). The licensee will use a more limiting high value of 106% for the "Required Action Range" in lieu of 110% that is normally required by the ASME OM Code for Group A tests. However, the high value 106% is greater than the high value of 103% for the biennial CPT. Using more accurate pressure gauges and a more limiting "Required Action Range" (compared

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

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to the Group A test "Required Action Range") during every modified quarterly Group A test compensates for the elimination of the CPT with its more limiting "Required Action Range" high value of 103%.

OMN-18 was published in the 2009 Edition of the ASME OM Code. This Edition of the ASME OM Code has not been incorporated by reference into 10 CFR 50.55a, and OMN-18 has not been incorporated into Regulatory Guide (RG) 1.192. However, the NRC staff has reviewed OMN-18, and currently has no concerns with its usage, providing that the high values of the Group A test "Required Action Range" for flow (Q) and differential pressure ( $\Delta P$ ) are greater than 106% of the respective reference values. The NRC staff considers the proposed alternative acceptable because all of the tests will be performed with pressure gauges with  $\pm 1/2\%$  accuracy. The elimination of the CPT, with its more limiting "Required Action Range" of upper bound of 103% of the reference value, is compensated for by using more accurate pressure gauges on every quarterly test. Regular testing with more accurate instrumentation and tighter acceptance criteria will provide for better trending of pump performance. Therefore, the NRC staff finds that the proposed alternative provides an acceptable level of quality and safety for testing the pumps listed in Section 1.0 above.

#### 4.0 CONCLUSION

As set forth above, the NRC staff finds that the proposed alternative described in Relief Request PR-01 provides an acceptable level of quality and safety for the pumps P-3-3A,B,C, and D, P-5-1 and 2, P-11-1 and 2, P-18-1A and B, P-19-1A and B, P-20-1A,B,C, and D, P-20-2A,B,C, and D, and P-21-1A,B,C, and D. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(i), and is consistent with the ASME OM Code's requirements. All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request remain applicable.

Therefore, the NRC staff authorizes the alternative described in Relief Request PR-01 for the OCNGS fifth IST program interval, which will begin on October 14, 2012, and is scheduled to end on October 13, 2022.

Principle Contributor: John Huang

Date: June 21, 2012

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

M. Pacilio

-2-

If you have any questions regarding this matter, please contact Senior Project Manager, John G. Lamb at (301) 415-3100 or by e-mail at John.Lamb@nrc.gov

Sincerely,

*/RA by Rick Ennis for/*

Meena Khanna, Chief  
Plant Licensing Branch 1-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosure: Safety Evaluation

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ADAMS Accession No'.. ML 120050329

Revision 20  
October 14, 2012

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OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**[Correction Letter for: SER Approval for Relief Request PR-01:**

**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

July 3, 2012

Mr. Michael J. Pacilio  
President and Chief Nuclear Officer  
Exelon Nuclear 4300 Winfield Road  
Warrenville, IL 60555

**SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION-CORRECTION TO RELIEF  
FROM THE REQUIREMENTS OF THE ASME CODE, RELIEF REQUEST NO. PR-01  
FOR FIFTH INSERVICE TESTING INTERVAL (TAC NO. ME7616)**

Dear Mr. Pacilio:

By letter dated November 17, 2011 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML 113250626), Exelon Nuclear submitted Relief Request (RR) PR-01 for Oyster Creek Nuclear Generating Station (OCNGS) during the fifth Inservice Testing (IST) interval, requesting the use of an alternative to certain requirements of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code).

By letter dated June 21, 2012 (ADAMS Accession No. ML 120050329), the U.S. Nuclear Regulatory Commission (NRC) staff authorized the alternative described in RR PR-01 for the fifth IST interval at OCNGS, which will begin on October 14, 2012, and ends on October 13, 2022.

Subsequently, it was discovered that the NRC staff made a typographical error in the third sentence of the second paragraph on page 5 of the safety evaluation (SE). The sentence currently reads:

However, the NRC staff has reviewed OMN-18, and currently has no concerns with its usage, providing that the high values of the Group A test "Required Action Range" for flow (Q) and differential pressure (~P) are greater than 106% of the respective reference values.

The sentence should be corrected in the SE to read the following:

However, the NRC staff has reviewed OMN-18, and currently has no concerns with its usage, providing that the high values of the Group A test "Required Action Range" for flow (Q) and differential pressure (~P) are less than 106% of the respective reference values.

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

M. Pacilio

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If you have any questions regarding this matter, please contact me at (301) 415-3100 or by e-mail at [John.Lamb@nrc.gov](mailto:John.Lamb@nrc.gov)

Sincerely,

John G Lamb, Senior Project Manager  
Plant Licensing Branch 1-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-219

cc: Distribution via Listserv

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

If you have any questions regarding this matter, please contact me at (301) 415-3100 or by e-mail at [John.Lamb@nrc.gov](mailto:John.Lamb@nrc.gov)

Sincerely,

/ra/

John G Lamb, Senior Project Manager  
Plant Licensing Branch 1-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-219

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Revision 20  
October 14, 2012

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OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**[SER Approval for Relief Request VR-01:]**

**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF, VR-01

FIFTH INSERVICE TESTING INTERVAL

OYSTER CREEK NUCLEAR GENERATING STATION

EXELON NUCLEAR

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated November 17, 2011 (Agencywide Documents and Access Management System Accession No. ML 113250626), Exelon Nuclear (Exelon or licensee) submitted relief request VR-01 for Oyster Creek Nuclear Generating Station (OCNGS) during the fifth Inservice Testing (IST) interval, requesting the use of an alternative to certain requirements of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code).

The licensee proposed an alternative testing method and acceptance criteria for the following valves:

- 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)

Specifically, pursuant to Title 10 of the *Code Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i), the licensee requested to use the proposed alternative on the basis that the alternative provides an acceptable level of quality and safety.

2.0 REGULATORY EVALUATION

Section 50.55a(f) of 10 CFR, "Inservice Testing Requirements," requires in part, that IST of certain ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with the

Enclosure

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

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specified ASME Code and applicable addenda incorporated by reference in the regulations. In proposing alternatives or requesting relief under 10 CFR 50.55a(a)(3)(i), the licensee must demonstrate that the proposed alternatives provide an acceptable level of quality and safety. Section 50.55a allows the NRC to authorize alternatives and to grant relief from ASME OM Code requirements upon making necessary findings. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides acceptable alternatives to ASME Code requirements. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, Revision 1, "Guidance for Inservice Testing at Nuclear Power Plants." ASME OM Code cases that are approved for use by the NRC are listed in Regulatory Guide (RG) 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," dated June 2003 (10 CFR 50.55a(b)(6)).

The Code of Record for OCNGS is the ASME OM Code, 2004 Edition with Addenda through Omb..2006, as required by 10 CFR 50.55a(f)(4)(ii). The OCNGS fifth IST interval will begin on October 14, 2012, and ends on October 13, 2022.

The NRC's findings with respect to authorizing the proposed alternative to the ASME OM Code are given below in the Technical Evaluation and Conclusion.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Alternative Request VR-01

##### 3.1.1 Licensee's Relief Request and Proposed Alternative

Appendix I, Paragraph 1-1320(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.

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.

The licensee 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 the licensee by removing and testing one-third of the 9 main steam safety valves (MSSVs) each refueling outage (RFO) in order to comply with the S-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, the licensee normally removes approximately one-half of the subject relief valves each RFO for off-site testing.

According to the licensee, the removal of half of the 9 valves versus a third of the valves each RFO 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

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

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tested over three RFOs by up to five valves, according to the licensee. The MSSVs are located in the upper elevations of the drywell. According to the licensee, reducing MSSV testing results in lower radiation exposure and a reduction in the cost for valve replacements.

As an alternative to the Code required 60-month test interval per Appendix I, Paragraph 1-1320(a), the licensee proposes that the subject Class 1 pressure relief valves be tested at least once every 72 months plus a 6-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. According to the licensee, this 20% would consist of valves that have not been tested during the current 6 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.

### 3.1.2 NRC Staff Evaluation

The ASME published Code Case OMN-17, "Alternative Rules for Testing ASME Class 1 Pressure Relief/Safety Valves," in the 2009 Edition of the OM Code. Code Case OMN-17 allows extension of the test frequency for safety relief valves (SRVs) from 5 years to 72 months with a 6-month grace period. The code case imposes a special maintenance requirement to disassemble and inspect each SRV to verify that parts are free from defects resulting from the time-related degradation or maintenance-induced wear prior to the start of the extended test interval. The U.S. Nuclear Regulatory Commission (NRC) staff recognizes that although Mandatory Appendix I, Paragraph 1-1320(a) of the ASME OM Code does not require that SRVs be routinely refurbished when tested on a 5-year interval, routine refurbishment provides additional assurance that set-pressure drift during subsequent operation is minimized. Consistent with the special maintenance requirement in Code Case OMN-17, the licensee stated that each currently installed MSSV was 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.

The NRC staff finds that extending the test interval to 72 months with a 6-month grace period is acceptable for the following MSSVs:

- 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)

Extending the test interval should not adversely affect the operational readiness of the MSSVs, because the MSSVs have been disassembled and inspected prior to the start of the extended test interval. This additional maintenance is beyond what is required by OM Code Mandatory

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

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Appendix I when testing MSSVs on a 5-year interval, and justifies extension of the test interval for up to 72 months plus a 6-month grace period while providing an acceptable level of quality and safety.

4.0 CONCLUSION

As set forth above, the NRC staff finds that the proposed alternative described in Relief Request VR-01 provides an acceptable level of quality and safety for the MSSVs listed above. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(i), and is in compliance with the ASME OM Code requirements. All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request remain applicable.

Therefore, the NRC staff authorizes the alternative described in Relief Request VR-01 for the OCNGS fifth IST program interval, which will begin on October 14, 2012, and ends on October 13, 2022.

Principle Contributor: Michael Farnan

Date: March 22, 2012

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

M. Pacilio

-2-

If you have any questions regarding this matter, please contact Senior Project Manager, John G. Lamb at (301) 415-3100 or by-mail at John.Lamb@nrc.gov.

Sincerely,

*/ra/*

Meena Khanna, Chief  
Plant Licensing Branch 1-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosure: Safety Evaluation

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OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**[SER Approval for Relief Request VR-02:]**

**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF, VR-02

FIFTH INSERVICE TESTING INTERVAL

OYSTER CREEK NUCLEAR GENERATING STATION

EXELON NUCLEAR

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated November 17, 2011 (Agencywide Documents and Access Management System Accession No. ML 113250626), Exelon Nuclear (Exelon or licensee) submitted relief request VR-02 for Oyster Creek Nuclear Generating Station (OCNGS) during the fifth Inservice Testing (IST) interval, requesting the use of an alternative to certain requirements of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code).

The licensee proposed an alternative testing method and acceptance criteria for the following containment isolation valves (CIVs):

- V-23-13, Drywell Nitrogen Purge Inlet Pressure Control Valve
- V-23-14, Drywell Nitrogen Purge Inlet Pressure Control Valve
- V-23-15, Torus Nitrogen Purge Inlet Pressure Control Valve
- V-23-16, Torus Nitrogen Purge Inlet Pressure Control Valve
- V-23-18, Drywell Make-up Nitrogen Purge Inlet Valve
- V-23-20, Drywell Nitrogen Relief Vent Valve
- V-23-21, Drywell Nitrogen Relief Vent Valve
- V-27-1, Drywell Ventilation Isolation Valve
- V-27 -2, Drywell Ventilation Isolation Valve
- V-27-3, Drywell Purge Isolation Valve
- V-27 -4, Drywell Purge Isolation Valve
- V-28-17, Torus Vent Exhaust Valve
- V-28-18, Torus Vent Exhaust Valve
- V-28-47, Torus Vent Exhaust Bypass Valve
- V-5-147, Drywell Inlet Isolation Valve for Reactor Building Closed Cooling Water System
- V-5-166, Drywell Cooler Outlet Header and Recirculation Pump Isolation Valve

Enclosure

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

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- V-5-167, Drywell Outlet Isolation Valve

Specifically, pursuant to Title 10 of the *Code Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i), the licensee requested to use the proposed alternative on the basis that the alternative provides an acceptable level of quality and safety.

## 2.0 REGULATORY EVALUATION

Section 50.55a(f) of 10 CFR, "Inservice Testing Requirements," requires in part, that IST of certain ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with the specified ASME Code and applicable addenda incorporated by reference in the regulations. In proposing alternatives or requesting relief under 10 CFR 50.55a(a)(3)(i), the licensee must demonstrate that the proposed alternatives provide an acceptable level of quality and safety. Section 50.55a allows the U.S. Nuclear Regulatory Commission (NRC) to authorize alternatives and to grant relief from ASME OM Code requirements upon making necessary findings. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides acceptable alternatives to ASME Code requirements. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, Revision 1, "Guidance for Inservice Testing at Nuclear Power Plants." ASME OM Code cases that are approved for use by the NRC are listed in Regulatory Guide (RG) 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," dated June 2003 (10 CFR 50.55a(b)(6)).

The Code of Record for OCNGS is the ASME OM Code, 2004 Edition with Addenda through Omb-2006, as required by 10 CFR 50.55a(f)(4)(ii). The OCNGS fifth IST interval will begin on October 14, 2012, and ends on October 13, 2022.

The NRC's findings with respect to authorizing the proposed alternative to the ASME OM Code are given below in the Technical Evaluation and Conclusion.

## 3.0 TECHNICAL EVALUATION

### 3.1 Alternative Request VR-02

#### 3.1.1 Licensee's Relief Request and Proposed Alternative

According to OM Code ISTC-3700, valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated.

The licensee proposed that the position indicators for the above valves will be verified at least once every 2 years; however, in lieu of local observation, the following method will be used to verify accurate position indication: (1) Proper system operation will verify accurate open position indication, and (2) successful leak rate test results each refueling outage (RFO) will verify accurate closed indication. These containment isolation valves are not on an extended 10 CFR 50, Appendix J, Option B test frequency.

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

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According to the licensee, 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, according to the licensee.

### 3.1.2 NRC Staff Evaluation

OM Code ISTC-3700 requires that valves with remote position indicators be observed locally at least once every 2 years to verify that valve operation is accurately indicated. However, for the above CIVs at OCNGS, it would be difficult for the licensee to verify the remote position indication by local observation because these valves are located in high radiation areas and this means testing would result in unnecessary radiation exposure to personnel. In order to reduce unnecessary radiation exposure to plant personnel, the licensee proposed to verify valve open position by system operation and close position by leak rate test.

As discussed in Section 4.2.7 of NUREG-1482, methods other than local observation, such as nonintrusive techniques, causing the flow to begin or cease, leak testing, and pressure testing can also yield a positive indication of the valve position. As such, the NRC staff considers that observation of operational parameters such as leakage, pressure, and flow is an acceptable approach and consistent with OM Code ISTC-3700. The licensee's proposed alternative of verifying the valve's open position by system operation and its closed position by leak-rate test is consistent with NUREG-1482, provides an acceptable level of safety and quality, and is, therefore, acceptable.

## 4.0 CONCLUSION

As set forth above, the NRC staff finds that the proposed alternative described in Relief Request VR-02 provides an acceptable level of quality and safety for the CIVs listed above. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(i), and is in compliance with the ASME OM Code's requirements. All other ASME OM Code requirements for which relief was not specifically requested and approved in the subject request remain applicable.

Therefore, the NRC staff authorizes the alternative described in Relief Request VR-02 for the OCNGS fifth IST program interval, which will begin on October 14, 2012, and ends on October 13, 2022.

Principle Contributor: John Billerbeck

Date: January 24, 2012

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

M. Pacilio

-2

If you have any questions regarding this matter, please contact Senior Project Manager, John G. Lamb at (301) 415-3100 or by e-mail at John.Lamb@nrc.gov.

Sincerely,

*/RA/*

Meena Khanna, Chief  
Plant Licensing Branch 1-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosure: Safety Evaluation

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OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**ATTACHMENT 7**  
**CODE CASE INDEX**

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**CODE CASE  
NUMBER**

**TITLE**

|        |   |
|--------|---|
| OMN-17 | The ASME Code committee has approved Code Case OMN-17, "Alternative Rules for Testing ASME Class 1 Pressure Relief/Safety Valves."                  |
| OMN-18 | The ASME Code committee has approved Code Case OMN-18, "Alternate Testing Requirements for Pumps Tested Quarterly within $\pm$ 20% of Design Flow". |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**ATTACHMENT 8**  
**COLD SHUTDOWN JUSTIFICATION INDEX**

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**ATTACHMENT 8**  
**COLD SHUTDOWN JUSTIFICATION INDEX**

| <u>Designator</u> | <u>Title/Description</u>  | <u>Approval Date</u> |
|-------------------|---|----------------------|
| CS-01             | Reactor Building Closed Cooling Water Containment Isolation Valves Exercise Testing, (V-5-147, V-5-166, V-5-167)                      | 10/14/2012           |
| CS-02             | Shutdown Cooling Containment Isolation Valves Exercise Testing, (V-17-1, V-17-2, V-17-3, V-17-19, V-17-54, V-17-55, V-17-56, V-17-57) | 10/14/2012           |
| CS-03             | Core Spray System Testable Check Valve Exercise Testing (V-20-150, V-20-151, V-20-152, V-20-153)                                      | 10/14/2012           |
| CS-04             | Main Steam Isolation Valve (MSIV) Full Stroke Exercise Testing, (V-1-7, V-1-8, V-1-9, V-1-10)   | 10/14/2012           |

Note: CS-02, CS-03 and CS-04 were deleted during the 4<sup>th</sup> 10-year IST interval. For the 5<sup>th</sup> 10-year interval, CS-05, CS-06 and CS-07 were sequenced up to now become CS-02, CS-03 and CS-04.



OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**ATTACHMENT 9**  
**COLD SHUTDOWN JUSTIFICATIONS**

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**ATTACHMENT 9**

**COLD SHUTDOWN JUSTIFICATION CS-01**

SYSTEM: Reactor Building Closed Cooling Water (RBCCW) (541)

VALVES: V-5-147, V-5-166, V-5-167

CLASS/CATEGORY: Class 2, Category A, Active

FUNCTION: RBCCW Containment Isolation Valves

TEST REQUIREMENT: Exercise test to the closed position in accordance with ISTC-3500.

BASIS FOR EXTENDED FREQUENCY: V-5-147, V-5-166, and V-5-167 are motor-operated gate valves in the RBCCW supply and return lines to various coolers located inside Primary Containment. Closure of these valves isolates cooling water flow to the Recirc Pumps and Drywell Coolers. Isolation of cooling water during normal plant operation can cause a Drywell temperature and pressure transient, or it can cause damage to the Recirc pumps requiring plant shutdown. The operators for these valves are not designed for partial exercise testing.

ALTERNATE TESTING: These valves will be exercise tested to the closed position during Cold Shutdowns in accordance with ISTC-3520

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**ATTACHMENT 9**

**COLD SHUTDOWN JUSTIFICATION CS-02** (Formerly CS-05)

SYSTEM: Shutdown Cooling (214)

VALVES: V-17-1, V-17-2, V-17-3, V-17-19,  
V-17-54, V-17-55, V-17-56, V-17-57

CLASS/CATEGORY: Class 1, Category B, Active

FUNCTION: Shutdown Cooling System Containment Isolation Valves

TEST REQUIREMENT: Full-stroke exercise to the closed position in accordance with ISTC-3500.

BASIS FOR EXTENDED FREQUENCY: Valves V-17-19 and V-17-54 are MOVs interlocked to remain closed when Reactor Coolant Temperature is above 350°F. Therefore, these valves cannot be cycled, either fully or partially, during normal Plant operation. In addition, the function of all these valves is to isolate the Shutdown Cooling System from the Reactor Recirc System. They are maintained in the closed position at all times during power operation. Opening them to perform an exercise test to the closed position would result in a reduction in the safety margin provided by keeping them closed.

ALTERNATE TESTING: These valves will be exercise tested to the closed position during Cold Shutdowns when Reactor Coolant temperature is below 350°F in accordance with ISTC-3520.

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**ATTACHMENT 9**

**COLD SHUTDOWN JUSTIFICATION CS-03** (Formerly CS-06)

**SYSTEM:** Core Spray (212)

**VALVES:** V-20-150, V-20-151, V-20-152, V-20-153

**CLASS/CATEGORY:** Class 1, Category AC, Active

**FUNCTION:** These testable check valves open to allow Core Spray injection into the Reactor Vessel following an accident. In the closed position, these valves function as Reactor Coolant Pressure Boundary Pressure Isolation Valves to isolate the low-pressure portions of the Core Spray System from the Reactor Coolant System.

**TEST REQUIREMENT:** Exercise to the fully open and closed positions necessary to fulfill the functions of these valves in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** During normal operation, the differential pressure across these valves is significantly greater than the shutoff head of the Core Spray pumps and greatly exceeds the capability of the test actuators to cycle them. Furthermore, these valves are Reactor Coolant Pressure Boundary Pressure Isolation Valves and are required to maintain a barrier between the Reactor Coolant and Core Spray Systems.

**ALTERNATE TESTING:** These valves will be exercised to the fully open and closed positions during Cold Shutdowns using the test operators in accordance with ISTC-3520.

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**ATTACHMENT 9**

**COLD SHUTDOWN JUSTIFICATION CS-04** (Formerly CS-07)

**SYSTEM:** Main Steam (411)

**VALVES:** V-1-7, V-1-8, V-1-9, V-1-10

**CLASS/CATEGORY:** Class 1, Category A, Active

**FUNCTION:** Main Steam Isolation Valves (MSIV's). Isolate the Reactor Pressure Vessel from areas outside Primary Containment in the event of several accident and abnormal event situations.

**TEST REQUIREMENT:** Exercise testing to the close position in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** Special testing is required to perform full-stroke exercise testing of these valves, which requires major plant power reduction evolutions. Previous quarterly surveillance testing history for these valves supports testing on a Cold Shutdown frequency. Furthermore, Section 2.4.5 of NUREG-1482 specifically identifies conditions which could result in a plant trip or require a reduction in power as appropriate justification for deferral of testing. A note in Section 4.2.6 of NUREG-1482 states that the revised technical specification bases for MSIV surveillance requirements indicates that MSIV's should not be tested at power.

**ALTERNATE TESTING:** These valves will be exercise tested to the closed position during Cold Shutdowns in accordance with ISTC-3520 and Technical Specification 4.5.F.3.

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**ATTACHMENT 10**  
**REFUELING OUTAGE JUSTIFICATION INDEX**

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**ATTACHMENT 10**  
**REFUEL OUTAGE JUSTIFICATION INDEX**

| <u>Designator</u> | <u>Title/Description</u>   | <u>Approval Date</u> |
|-------------------|--|----------------------|
| RJ-01             | Main Steam Isolation Valve Fail-Safe Testing<br>(V-1-7, V-1-8, V-1-9, V-1-10)  | 10/14/2012           |
| RJ-02             | EMRV Discharge Piping Vacuum Relief Valve<br>Exercise Testing, (V-1-190, V-1-191, V-1-192,<br>V-1-193)   | 10/14/2012           |
| RJ-03             | Feedwater Check Valve Exercise Testing, (V-2-71,<br>V-2-72, V-2-73, V-2-74)  | 10/14/2012           |
| RJ-04             | Reactor Building Closed Cooling Water Containment<br>Isolation Check Valve Closure Testing, (V-5-165)  | 10/14/2012           |
| RJ-05             | Instrument Air Containment Isolation Check Valve<br>Closure Testing, (V-6-393)   | 10/14/2012           |
| RJ-06             | CRD Hydraulic System Discharge to RPV<br>Containment Isolation Check Valves Closure Testing,<br>(V-15-27, V-15-28)   | 10/14/2012           |
| RJ-07             | Reactor Water Cleanup Return Containment Isolation<br>Check Valve Closure Testing, (V-16-62)   | 10/14/2012           |
| RJ-08             | Liquid Poison Injection Header Check Valve Exercise<br>Testing, (V-19-16, V-19-20)   | 10/14/2012           |
| RJ-09             | Control Rod Drive Scram Valve Exercise Testing,<br>(V-15 (126), V-15 (127))  | 10/14/2012           |
| RJ-10             | Stand By Liquid Control Squib Valve Exercise Test,<br>(V-19-44 and V-19-45)  | 10/14/2012           |
| RJ-11             | Scram Discharge Volume Vent and Drain Valves<br>Exercise and Fail-Safe Testing, (V-15-119, V-15-120,<br>V-15-121, V-15-133, V-15-134, V-15-135, V-15-136,<br>V-15-137) | 10/14/2012           |
| RJ-12             | Instrument Air Containment Isolation Valve Exercise<br>Test, (V-6-395)   | 10/14/2012           |

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**ATTACHMENT 10**  
**REFUEL OUTAGE JUSTIFICATION INDEX**

| <u>Designator</u> | <u>Title/Description</u>  | <u>Approval Date</u> |
|-------------------|---|----------------------|
| RJ-13             | Control Rod Drive HCU Charging Water Accumulator Check Valve Exercise Test, (V-15 (106))                            | 10/14/2012           |
| RJ-14             | Reactor Water Cleanup System Containment Isolation Valves Exercise Testing, (V-16-1, V-16-2, V-16-14, V-16-61)      | 10/14/2012           |
| RJ-15             | Isolation valve inline between the CST and the hotwell, (V-2-90)  | 10/14/2012           |
| RJ-16             | Core Spray System Main Pump discharge check valves. (V-20-8, V-20-9, V-10-16, V-20-22)                              | 10/14/2012           |
| RJ-17             | Core Spray System Booster Pump discharge and bypass check valves. (V-20-52, V-20-53, V-20-54, V-20-55)              | 10/14/2012           |
| RJ-18             | Interface valves between the Core Spray System and the Fire Protection System, (V-20-60, V-20-61, V-20-88, V-20-89) | 10/14/2012           |
| RJ-19             | Spent Fuel Pool Augmented Cooling Pump Discharge Check Valves (V-18-76, V-18-77)                                    | 10/14/2012           |
| RJ-20             | Core Spray Pump test return line. (V-20-30, V-20-31)  | 10/14/2012           |
| RJ-21             | Core Spray Booster Pump bypass check valves, (V-20-50 and V-20-51)  | 10/14/2012           |
| RJ-22             | Hydrogen/Oxygen Monitoring Sample System (V-38-9, V-38-10, V-38-16, V-38-17, V-38-22, V-38-23)                      | 10/14/2012           |



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**REFUELING OUTAGE JUSTIFICATIONS**

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-01**

**SYSTEM:** Main Steam (411)

**VALVES:** V-1-7, V-1-8, V-1-9, V-1-10

**CLASS/CATEGORY:** Class 1, Category A, Active

**FUNCTION:** Main Steam Isolation Valves (MSIV's). Close to isolate the Reactor from the Main Steam System outside of Primary Containment in a number of accident scenarios. Also function as Containment Isolation Valves.

**TEST REQUIREMENT:** Fail-safe testing in accordance with ISTC-3500

**BASIS FOR EXTENDED FREQUENCY:** These valves normally close by a combination of spring force and air pressure. Special testing is required to perform fail-safe closure of these valves, which requires plant shutdown or major power reductions. In order to satisfy Code requirements, the fail-safe test is performed without assistance from the pneumatic supply system. Access to the valves is required for pneumatic system alignment and to observe that the operators function properly during the test. Performance of this test requires access to either the Drywell or Trunnion Room, which are both high radiation areas. Drywell access may not be available during Cold Shutdowns.

**ALTERNATE TESTING:** These valves will be fail-safe tested when the proper alignments can be made and access is available. This will be on no less than a refueling outage frequency as permitted by ISTC-3520. Additional testing may be performed during Cold Shutdowns if access to the valve is available.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-02**

**SYSTEM:** Main Steam (411)

**VALVES:** V-1-190, V-1-191, V-1-192, V-1-193

**CLASS/CATEGORY:** Class 2, Category C, Active

**FUNCTION:** These check valves are used to equalize pressure between the Electromatic Relief Valve (EMRV) discharge downcomers and the Drywell atmosphere following EMRV actuation. The valves open to prevent siphoning of water from the Torus as the steam in the downcomers condenses, which could subject the downcomers, downcomer supports, and other Torus components to excessive forces upon a reopening of the EMRVs. These valves close to contain and direct steam from the EMRV's to the Torus.

**TEST REQUIREMENT:** Exercise test to the open and closed position required to fulfill their function in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** Access to the Drywell is required to perform the requisite testing. These valves are not provided with any mechanisms for exercising the internals, and the test requires removal of the valve inlet screen and the use of a special tool rig to stroke the valve and measure the opening force. Due to the inert atmosphere and high radiation conditions in the Drywell, this is not possible during normal power operation, and is impractical during most Cold Shutdown outages.

**ALTERNATE TESTING:** These valves will be exercise tested to the open and closed position by the use of the special tool rig during each refueling outage as permitted by ISTC-3520. In addition, this tool rig will be used to measure the opening force of each valve.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-03**

**SYSTEM:** Feedwater (422)

**VALVES:** V-2-71, V-2-72, V-2-73, V-2-74

**CLASS/CATEGORY:** Class 1, Category AC, Active

**FUNCTION:** Provide Containment Isolation and prevent loss of inventory from the Reactor Vessel in the event of a loss of Feedwater.

**TEST REQUIREMENT:** Exercise test to the closed position in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** It is essential that these valves remain open to supply inventory to the Reactor Vessel during normal power operation in order to maintain reactor level. An interruption in Feedwater flow would result in an unnecessary shutdown of the Plant. These valves are also impractical to test during Cold Shutdowns, since they are not fitted with exercise arms or position indication. All of the valves utilize LLRT test results to demonstrate that they have traveled to the fully closed position, which requires containment deinerting and drywell access for system alignment and draining. Extensive effort is required to set up the equipment, drain the test volume, perform the test, refill the test volume, remove the test equipment and restore the system to operation. Such effort would most likely delay Plant startup and would result in unnecessary exposure to personnel.

**ALTERNATE TESTING:** These valves are exercise tested to the open position during normal continuous operation of the Feedwater system. These valves will be exercised to the closed position during each refueling outage as permitted by ISTC-3520.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-04**

**SYSTEM:** Reactor Building Closed Cooling Water (RBCCW) (541)

**VALVE:** V-5-165

**CLASS/CATEGORY:** Class 2, Category AC, Active

**FUNCTION:** RBCCW Containment Isolation Check Valve

**TEST REQUIREMENT:** Exercise test to the closed position in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** This valve is a check valve in the RBCCW supply header to the system heat loads inside Containment. Testing of this valve to the closed position requires shutdown and isolation of the RBCCW System. This valve is not fitted with an exercise arm or position indication, and special testing is required to verify the closed position of this valve. There is no practical means to perform such testing during normal Plant operation nor during Cold Shutdown. Based on the function of this valve, partial testing in the closing direction is neither meaningful nor practical.

**ALTERNATE TESTING:** This valve is exercise tested to the open position during normal continuous operation of the RBCCW pumps. This valve will be exercise tested to the close position during refueling outages as permitted by ISTC-3520.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-05**

SYSTEM: Instrument Air (852)

VALVE: V-6-393

CLASS/CATEGORY: Class N/A, Category AC, Active

FUNCTION: Instrument Air System Containment Isolation Check Valve.

TEST REQUIREMENT: Exercise test to the closed position in accordance with ISTC-3500.

BASIS FOR EXTENDED FREQUENCY: This valve is not fitted with any parts which would give an external positive indication of its position, such as an exercise arm or position-indicating device. Special testing is required to test this valve to the closed position, which requires Drywell access and isolation of control air to all equipment in the Drywell, including the Main Steam Isolation Valves (MSIV's) and the Drywell Coolers.

ALTERNATE TESTING: This valve is exercise tested to the open position during normal continuous operation of the Instrument Air System. This valve will be exercise tested to the closed position during each refueling outage as permitted by ISTC-3520.

**NOTE: This valve is a non-ASME Code Class component**

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-06**

**SYSTEM:** Control Rod Drive (225)

**VALVES:** V-15-27, V-15-28

**CLASS/CATEGORY:** Class 1, Category AC, Active

**FUNCTION:** Control Rod Drive Hydraulic System Discharge to Reactor Vessel Containment Isolation Valves

**TEST REQUIREMENT:** Exercise test to the closed position in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** These valves are not fitted with any parts which would give an external positive indication of their position, such as an exercise arm or position-indicating device. In order to test these valves to the closed position, the CRD Hydraulic System must be shut down. Since the System must be operable during power operation and is normally kept operating during periods when the Reactor is shut down, it is not practical to attempt to closure test these valves quarterly or during Cold Shutdowns.

**ALTERNATE TESTING:** These valves are exercise tested to the open position during normal continuous operation of the CRD pumps. Valves will be exercised tested to the closed position during each refueling outage as permitted by ISTC-3520.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-07**

**SYSTEM:** Reactor Water Cleanup (215)

**VALVE:** V-16-62

**CLASS/CATEGORY:** Class 1, Category AC, Active

**FUNCTION:** Reactor Water Cleanup System Return Containment Isolation Check Valve.

**TEST REQUIREMENT:** Exercise test to the closed position in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** This valve is required to be open during normal plant operation so that the Cleanup System can maintain the water quality of the Reactor Coolant within Technical Specification limits. Exercising this valve requires the RWCU filter and demineralizer to be taken out of service. Additionally, this valve is not fitted with any parts which would give an external positive indication of its position, such as an exercise arm or position indicating device. Hence it requires LLRT testing to demonstrate that it has traveled to the fully closed position. This valve is located in the Drywell, requiring deinerting of the Containment for system alignment and draining to perform the LLRT. The Cleanup System is normally maintained in operation during Cold Shutdown. Extensive effort is required to set up the equipment, drain the test volume, perform the test, refill the test volume, remove the test equipment and restore the system to operation. Such an effort would most likely challenge Reactor Chemistry limits, delay Plant startup, and result in unnecessary exposure to personnel.

**ALTERNATE TESTING:** This valve is exercise tested to the open position during normal continuous operation of the Reactor Water Cleanup System. This valve will be exercise tested to the closed position during each refueling outage as permitted by ISTC-3520.



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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-08**

**SYSTEM:** Standby Liquid Control (Liquid Poison) (213)

**VALVES:** V-19-16, V-19-20

**CLASS/CATEGORY:** Class 1, Category AC, Active

**FUNCTION:** These valves open to permit the injection of liquid poison (sodium pentaborate) into the Reactor Vessel in the event that the control rods are not able to shut the reactor down. The valves also close to provide containment isolation.

**TEST REQUIREMENT:** Exercise test to the open and closed position in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** In order to exercise these valves to the open position, one of the two explosively actuated Squib valves must be fired and liquid must be injected by the corresponding pump. During power operation, this would involve the injection of cold, highly concentrated sodium pentaborate into the RCS, causing plant shutdown, and creating an undue burden on Cleanup System resources. During Cold Shutdown, flushing of the System for long periods of time would be required resulting in large quantities of hazardous waste material and very likely resulting in a delay of Plant startup.

**ALTERNATE TESTING:** These valves will be exercise tested to the open and closed position during each refueling outage as permitted by ISTC-3520 in conjunction with the test firing of one of the two Squib valves.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-09**

**SYSTEM:** Control Rod Drive (225)

**VALVES:** V-15-(126), V-15-(127)  
(Also identified as V-305-(126) and V-305-(127))

**CLASS/CATEGORY:** Class 2, Category B, Active

**FUNCTION:** These valves (137 of each) are the scram inlet and outlet valves for each of the Hydraulic Control Units (HCU's). They function to scram the associated control rod.

**TEST REQUIREMENT:** Perform exercise, stroke-time and fail-safe testing in accordance with the applicable requirements of ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** These valves are a part of the major component – the HCU, and are considered skid-mounted components. Valves CV-126 and 127 cannot be exercised during power operation since exercising these valves will scram the associated control rod. Rapid insertion and withdrawal of the rod at power could cause rapid reactivity transients and could cause fuel damage to the core.

These valves are not provided with indication for both positions and have stroke times in the order of milliseconds. As a part of the major component, the HCU, these valves open to scram the associated control rod and close to allow normal control rod drive movement. Control Rod scram time testing provides an indirect measurement of the stroke time for these valves and is an acceptable test.

**ALTERNATE TESTING:** Per Technical Specification requirements, a sample of 8 of these valves are tested during startup from cold shutdown if the sample has not been tested in the previous 6 months. All valves are tested at each refueling.

Verifying the associated control rod meets the scram insertion time limits as defined in Technical Specifications is an acceptable method of detecting degradation of these valves.

As discussed in Section 3.4 of NUREG 1482 R1, and further documented in Section 4.4.6 of the NUREG, rod scram tests frequency identified in Technical Specifications may be used as an acceptable alternate valve testing frequency.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-10** (Formerly RJ-23)

**SYSTEM:** Standby Liquid Control (213)

**VALVES:** V-19-44, V-19-45

**CLASS/CATEGORY:** Class 2, Category BD, Active

**FUNCTION:** Provides the flow path for the injection of highly-concentrated sodium pentaborate into the RCS to bring the reactor to a shutdown condition at any time in core life independent of control rod capabilities.

**TEST REQUIREMENT:** Exercise testing to the open position in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** These valves do not have position indication and cannot be stroke timed without modification. The only means available for the determination/verification of obturator position is by observing other evidence such as changes in system pressure or flow rate during the performance of system flow testing in accordance with ISTC-3530. Each of the two Conax explosive valves is a double-squib-actuated shear plug. When either squib is fired, the shear plug is forced across a welded cap allowing flow through the valve body. There is no practicable system design that would permit exercising these valves without adversely affecting the safety or operability of the plant when the reactor is in the run mode. The explosive valve squib continuity is continuously monitored and annunciated in the Control Room. The remainder of the Standby Liquid Control System is being tested during normal plant operation.

**ALTERNATE TESTING:** These valves will be tested in the open position during each Refueling Outage in accordance with ISTC-3521, ISTC-3530 and ISTC-5260 when tested in accordance with Technical Specification 4.2.E.3.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-11**

**SYSTEM:** Control Rod Drive (225)

**VALVES:** V-15-119, V-15-120, V-15-121, V-15-133,  
V-15-134, V-15-135, V-15-136, V-15-137

**CLASS/CATEGORY:** Class 2, Category B, Active

**FUNCTION:** Isolate the Scram Discharge Volume (SDV) on initiation of a scram to contain the water discharged from above the CRD piston.

**TEST REQUIREMENT:** Full-stroke exercise and fail-safe test to the closed position in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** The subject valves are currently exercised quarterly in accordance with Technical Specification 4.2.G. Quarterly exercising utilizes the test solenoid to bleed off control air pressure resulting in the valve traveling to the closed position, in a slow controlled manner.

The safety function scram solenoid (separate from the test solenoid) is energized in the event of a scram and allows the valve to close quickly. However, the safety function of this scram solenoid is not exercised by the quarterly test. A reactor scram signal is required to actuate the safety-function scram solenoid in order to test the specific fail safe function. Fail closed and stroke time testing will be performed on the faster scram solenoids on a Refueling bases per Technical Specification 4.2.H.

**ALTERNATE TESTING:** These valves will be exercised quarterly using valve exercise solenoids in accordance with TS 4.2.G. Fail-safe and stroke-time testing using the safety-related solenoids will be performed during Refueling Outages in accordance with ISTC-3520.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-12**

SYSTEM: Drywell Instrument Air & Nitrogen (852)

VALVES: V-6-395

CLASS/CATEGORY: Class N/A, Category A, Active

FUNCTION: Drywell Instrument Air & Nitrogen containment isolation valve.

TEST REQUIREMENT: Exercise and fail-safe test to the closed position in accordance with ISTC-3500.

BASIS FOR EXTENDED FREQUENCY: The Drywell Instrument Air & Nitrogen system provides air to the actuators and accumulators of the inboard Main Steam Isolation Valves (MSIV's), as well as other equipment in the drywell. The system is supplied by nitrogen or air compressors external to the drywell. Supplying the system with nitrogen when the containment is inerted helps to maintain oxygen within Technical Specification limits, with pneumatic operator leakage.

It is impractical to perform a closure test on the Instrument Air Containment isolation valve during plant operation, because the test would isolate the supply to the pneumatic loads in the drywell, including the MSIV's. This could result in one or more of the MSIV's starting to drift toward the closed position, which in turn could result in a Reactor Scram. Such an event during normal full-power operation would create unnecessary challenges to Plant safety systems and equipment.

This test is also impractical to perform during cold shutdown, since the normal reactor vent path could be lost due to MSIV closure. Failure in the closed position during testing would also result in a loss of pneumatic system supply to other critical equipment, including Reactor Sample Valve V-24-29 and the Drywell Coolers. In addition to the loss of the normal Reactor vent path from MSIV closure, a prolonged lack of pneumatic supply pressure during cold shutdown would result in Reactor Sampling and Drywell Cooling challenges.

ALTERNATE TESTING: This valve will be Fail safe and exercise tested to the closed position during each refueling outage as permitted by ISTC-3520.

**NOTE: This valve is a non-ASME Code Class component.**

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-13**

|                                      |   |
|--------------------------------------|---|
| <b>SYSTEM:</b>                       | Control Rod Drive (CRD) (225)   |
| <b>VALVES:</b>                       | V-15-(106)<br>Also identified as V-305-(106)  |
| <b>CLASS/CATEGORY</b>                | Class 2, Category AC, Active  |
| <b>FUNCTION:</b>                     | CRD Hydraulic Control Unit (HCU) charging water check valves<br>(one valve each per 137 HCU's)  |
| <b>TEST REQUIREMENT:</b>             | Exercise test to the closed position in accordance with IST-3500.   |
| <b>BASIS FOR EXTENDED FREQUENCY:</b> | Testing this valve during power operation would require depressurizing the Control Rod Drive charging water header, resulting in a possible degradation of the primary scram system's capability. Normal cooling water flow for the CRD's could also be lost while testing which could be detrimental to the control rod drives. The test technique and equipment is extensive and if tested during a Cold Shutdown, could delay plant restart. Additionally, since CRD pumps supply water to the Recirculation pump seals and at least one is usually kept in operation, testing during cold shutdowns would be impractical. |
| <b>ALTERNATE TESTING:</b>            | All 137 of these valves will be exercise tested to the closed position during Refueling Outages. Testing requires depressurizing the Control Rod Drive charging water header and verifying by the depressurization rate of the associated HCUs that the valves have traveled to the closed position.<br><br>The testing described is consistent with and an acceptable alternate to, the required valve testing frequency as discussed in Section 4.4.6 of NUREG 1482.  |

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-14**

**SYSTEM:** Reactor Water Cleanup (RWCU) (215)

**VALVES:** V-16-1, V-16-2, V-16-14, V-16-61

**CLASS/CATEGORY:** Class 1, Category A, Active

**FUNCTION:** Provide isolation of the RWCU System Containment penetrations upon receipt of isolation signals.

**TEST REQUIREMENT:** Exercise testing to the close position in accordance with ISTC-3500.

**BASIS FOR EXTENDED FREQUENCY:** These valves are required to be open during normal plant operation so that the Cleanup System can maintain the water quality of the Reactor Coolant within Technical Specification limits. In Cold Shutdown, the Cleanup System remains in service to maintain water quality to allow plant restart as scheduled. The valves isolate automatically on receipt of Containment and/or system isolation signals. Exercising these valves requires the RWCU filter and demineralizer to be taken out of service. It is impracticable to full stroke or partial stroke exercise these valves during normal plant operation or during cold shutdowns since a reactor water cleanup system outage is required to exercise the valves, and the system is required both during normal operation and during cold shutdowns. Securing the system, performing the testing, and restoring the system to service during power operation or cold shutdown is a complex evolution typically involving a significant amount of in-plant operations and radiation dose. Sudden changes in system temperature or flow could result in significant water chemistry changes, which challenge allowable limits. In addition, instances of resin intrusion into the RPV have occurred at other plants as a result of Cleanup System evolutions. The actuator design for these valves does not allow partial stroke testing.

**ALTERNATE TESTING:** These valves will be exercise tested to the closed position during Refueling Outages in accordance with ISTC-3520.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-15**

|                               |  |
|-------------------------------|--|
| SYSTEM:                       | Condensate System (422)  |
| VALVES:                       | V-2-90   |
| CLASS/CATEGORY:               | Class N/A, Category B, Active  |
| FUNCTION:                     | To isolate the line between the CST and the hotwell when instrument air is lost  |
| TEST REQUIREMENT:             | Exercise and Fail Safe testing to the close position in accordance with ISTC-3500.   |
| BASIS FOR EXTENDED FREQUENCY: | <p>This valve is required to be open during normal plant operation to maintain condenser hotwell level and to ensure that the flow path to the condenser is available without jeopardizing a condensate pump operated at low flow in the event of loss of instrument air.</p> <p>It is preferable to perform this test with CRD pumps shutdown and the Temporary CRD Filter Skid in service. This makes it impractical to perform this testing during cold shutdowns.</p> <p><b>Note:</b> The Condensate System is classified as Non safety related (N) as per Oyster Creek Line Specification CH-1C. Since V-2-90 is used to meet Appendix R requirements, the valve is classified as an Augmented Quality "A" component.</p> |
| ALTERNATE TESTING:            | This valve will be exercised and fail safe tested to the closed position during Refueling Outages in accordance with ISTC-3520.  |



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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-16**

SYSTEM: Core Spray (212)

VALVES: V-20-8, V-20-9, V-20-16, V-20-22,

CLASS/CATEGORY: Class 2, Category C, Active

FUNCTION: Provide a flow path for Core Spray System during abnormal events

TEST REQUIREMENT: Exercise test to the open position in accordance with ISTC 3500.

BASIS FOR EXTENDED FREQUENCY: The test line utilized for testing these valves will not pass the maximum flow rate. A sample disassembly examination program shall be used to verify obturator movement in accordance with ISTC-5220.

Justification of Valve Grouping  
Manufacturer: Flowserve Corporation  
Model: 2066-5, 8 inch swing check  
Service: Containment Spray Pump (P-20-1A, 1B, 1C and 1D) discharge check valves.  
Service medium: Torus water  
Orientation: Same

ALTERNATE TESTING: Partial exercise open testing shall be performed quarterly in accordance with ISTC-3500. At least one valve from the group shall be disassembled and examined at each refueling outage; all valves in the group shall be disassembled and examined at least once every 8 years in accordance with ISTC-5220.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-17**

SYSTEM: Core Spray (212)

VALVES: V-20-52, V-20-53, V-20-54, V-20-55

CLASS/CATEGORY: Class 2, Category C, Active

FUNCTION: Provide a flow path for Core Spray System during abnormal events.

TEST REQUIREMENT: Exercise test to the open position in accordance with ISTC 3500.

BASIS FOR EXTENDED FREQUENCY: The test line utilized for testing these valves will not pass the maximum flow rate. A sample disassembly examination program shall be used to verify obturator movement in accordance with ISTC-5220.

Justification of Valve Grouping  
Manufacturer: Crane Valve  
Model: 159-1/2X46786, 10 inch swing check  
Service: Core Spray Booster Pump (P-20-2A, 2B, 2C and 2D) discharge check valves.  
Service medium: Torus water  
Orientation: Same

ALTERNATE TESTING: Partial exercise open testing shall be performed quarterly in accordance with ISTC-3500. At least one valve from the group shall be disassembled and examined at each refueling outage; all valves in the group shall be disassembled and examined at least once every 8 years in accordance with ISTC-5220.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-18**

SYSTEM: Core Spray (212)

VALVES: V-20-60, V-20-61, V-20-88, V-20-89,

CLASS/CATEGORY: Class 2, Category C, Active

FUNCTION: Provide a flow path to Core Spray System when using the Fire Protection System as an alternate makeup water source and maintain system boundary when water is supplied from the Torus.

TEST REQUIREMENT: Exercise test to the open and closed position in accordance with ISTC 3500.

BASIS FOR EXTENDED FREQUENCY: Open exercise testing of these valves will result in the pumping of fire water into the Torus and the resultant contamination of the demineralized water contained in the Torus. Closed exercise testing is also not practicable because the valves cannot be exercised opened. A sample disassembly examination program shall be used to verify obturator movement in accordance with ISTC-5220.

Justification of Valve Grouping  
Model: 159-1/2X, 6 inch swing check  
Manufacturer: Crane Valve  
Service: Fire water supply to Core Spray System  
Service medium: Torus water / Fire water  
Orientation: Same

ALTERNATE TESTING: Closure verification testing shall be performed quarterly. At least one valve from the group shall be disassembled and examined at each refueling outage; all valves in the group shall be disassembled and examined at least once every 8 years in accordance with ISTC-5220.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-19**

SYSTEM: Spent Fuel Pool Cooling (251)

VALVES: V-18-76, V-18-77

CLASS/CATEGORY: Class 3, Category C, Active

FUNCTION: Functions in the open position to pass discharge flow from an operating Augmented Fuel Pool Cooling Pump and in the closed position to prevent diversion of flow when the parallel pump is operating.

TEST REQUIREMENT: Exercise test to the open and closed positions in accordance with ISTC-3500.

BASIS FOR EXTENDED FREQUENCY: The Augmented Fuel Pool Cooling Pump s and heat exchanger operate intermittently, and so surveillance activities are conducted prior to each anticipated use such that satisfactory performance can be verified (Reference UFSAR 9.1.3.3.c).

ALTERNATE TESTING: These valves will be exercise tested to the open and closed positions during Refueling Outages and prior to returning the Augmented Fuel Pool Cooling system to service in accordance with ISTC-5220.

**NOTE: These valves are augmented IST components.**

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-20**

SYSTEM: Core Spray (212)

VALVES: V-20-30, V-20-31

CLASS/CATEGORY: Class 2, Category C, Active

FUNCTION: Provide a flow path for Core Spray pump recirculation testing (normal operation) and provide a flow path for Core Spray Pump minimum flow to the Torus during abnormal events.

TEST REQUIREMENT: Exercise test to the closed position in accordance with ISTC-3500.

BASIS FOR EXTENDED FREQUENCY: These valves are not provided with test connections which would permit the exercising of the valves in the closed position. A sample disassembly examination program shall be used to verify obturator movement in accordance with ISTC-5220.

Justification of Valve Grouping  
Manufacturer: Flowserve Corporation  
Model: 2067-5, 6 inch swing check  
Service: Core Spray minimum and recirculation flow  
Service medium: Torus water  
Orientation: Same

ALTERNATE TESTING: Exercise test quarterly to the open position in accordance with ISTC-3500. At least one valve from the group shall be disassembled and examined at each refueling outage; all valves in the group shall be disassembled and examined at least once every 8 years in accordance with ISTC-5220.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-21**

SYSTEM: Core Spray (212)

VALVES: V-20-50, V-20-51

CLASS/CATEGORY: Class 2, Category C, Active

FUNCTION: Provide a flow path for Core Spray System during abnormal events.

TEST REQUIREMENT: Exercise test to the open position in accordance with ISTC-3500.

BASIS FOR EXTENDED FREQUENCY: The test line utilized for testing these valves will not pass the maximum flow rate. A sample disassembly examination program shall be used to verify obturator movement in accordance with ISTC-5220.

Justification of Valve Grouping  
Manufacturer: Crane Valve  
Model: 159-1/2X46786, 10 inch swing check  
Service: Core Spray Booster Pump (P-20-2A, 2B, 2C and 2D)  
Bypass check valves.  
Service medium: Torus water  
Orientation: Same

ALTERNATE TESTING: Partial exercise open testing shall be performed quarterly in accordance with ISTC-3500. At least one valve from the group shall be disassembled and examined at each refueling outage; all valves in the group shall be disassembled and examined at least once every 8 years in accordance with ISTC-5220.

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**ATTACHMENT 11**

**REFUELING OUTAGE JUSTIFICATION RJ-22**

SYSTEM: Hydrogen/Oxygen Monitoring (666)

VALVES: V-38-9, V-38-10, V-38-16, V-38-17, V-38-22, V-38-23

CLASS/CATEGORY: Class N/A, Category A, Active

FUNCTION: These valves provide for the isolation of the drywell and torus atmosphere sample flow paths during abnormal events.

TEST REQUIREMENT: Exercise and Fail Safe testing to the close position in accordance with ISTC-3500.

BASIS FOR EXTENDED FREQUENCY: These valves do not have position indication and cannot be stroke timed without modification. The only means available for the determination/verification of obturator position is by observing other evidence such as changes in system pressure or flow rate during the performance of seat leakage testing in accordance with ISTC-3530.

ALTERNATE TESTING: These valves will be fail safe and exercise tested to the closed position during each Refueling Outage in accordance with ISTC-3520, ISTC-3530 and ISTC-3560 during the performance of local leakage rate testing in accordance with the Oyster Creek Primary Containment Leakage Rate Testing Program.

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**ATTACHMENT 12**  
**TECHNICAL POSITION INDEX**



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**ATTACHMENT 12**

**TECHNICAL POSITION INDEX**

| <u>Technical Position Number</u> | <u>Revision</u> | <u>Title/Description</u>  |
|----------------------------------|-----------------|---|
| CTP-IST-001                      | 1               | Preconditioning of IST Program Components   |
| CTP-IST-002                      | 1               | Quarterly Pump Testing Under Full-Flow Conditions   |
| CTP-IST-003                      | 0               | Quarterly Testing of Group B Pumps  |
| CTP-IST-004                      | 1               | Classification of Pumps: Centrifugal vs. Vertical Line Shaft                                |
| CTP-IST-005                      | 1               | Preservice Testing of Pumps   |
| CTP-IST-006                      | 1               | Classification and Testing of Class 1 Safety/Relief Valves With Auxiliary Actuating Devices |
| CTP-IST-007                      | 1               | Skid-Mounted Components   |
| CTP-IST-008                      | 1               | Position Verification Testing   |
| CTP-IST-009                      | 0               | ASME Class 2 & 3 Relief Valve Testing Requirements  |
| CTP-IST-010                      | 0               | ERV and PORV Testing Requirements   |
| CTP-IST-011                      | 0               | Extension of Exercise Testing Frequencies to Cold Shutdown or Refueling Outage              |
| CTP-IST-012                      | 0               | Use of ASME OM Code Cases for Inservice Testing   |
| CTP-IST-013                      | 0               | Exercise Testing Requirements for Valves with Fail-Safe Actuators                           |
| CTP-IST-014                      | 0               | Bi-directional Testing of Check Valves to Their Safety and Non-Safety Related Positions     |

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**ATTACHMENT 13**  
**TECHNICAL POSITIONS**

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**ATTACHMENT 13**

**Number:** CTP-IST-001, Rev. 1

**Title:** Preconditioning of IST Program Components

**Applicability:** All Exelon IST Programs. This issue also applies to other Technical Specification surveillance testing where preconditioning may affect the results of the test. This Technical Position may be adopted optionally by other Exelon organizations.

**Background:** There are no specified ASME Code requirements regarding preconditioning or the necessity to perform as-found testing, with the exception of set point testing of relief valves and MOV testing performed in accordance with Code Case OMN-1 or Mandatory Appendix III. Nevertheless, there has been significant concern raised by the NRC, and documented in numerous publications, over this issue. Section 3.5 of Reference 2 provides guidance on preconditioning as it relates to IST; Section 3.6 provides additional guidance on as-found testing. It is the intent of this Technical Position to provide a unified, consistent approach to the issue of preconditioning as it applies to IST Programs throughout the Exelon fleet.

The purpose of IST is to confirm the operational readiness of pumps and valves within the scope of the IST Program to perform their intended safety functions whenever called upon. This is generally accomplished by testing using quantifiable parameters which provide an indication of degradation in the performance of the component. Preconditioning can diminish or eradicate the ability to obtain any meaningful measurement of component degradation, thus defeating the purpose of the testing.

Preconditioning is defined as the alteration, variation, manipulation, or adjustment of the physical condition of a system, structure, or component before Technical Specification surveillance or ASME Code testing. Since IST is a component-level program, this Technical Position will address preconditioning on a component-level basis. Preconditioning may be acceptable or unacceptable..

- Acceptable preconditioning is defined as preconditioning which is necessary for the protection of personnel or equipment, which has been evaluated as having insufficient impact to invalidate the results of the surveillance test, or which provides performance data or information which is equivalent or superior to that which would be provided by the surveillance test.
- Unacceptable preconditioning is preconditioning that could potentially mask degradation of a component and allow it to be returned to or remain in service in a degraded condition.

In most cases, the best means to eliminate preconditioning concerns is to perform testing in the as-found condition. When this is not practical, an evaluation must be performed to determine if the preconditioning is acceptable. Appendix 1 to this Technical Position may be used to document this evaluation.

The acceptability or unacceptability of preconditioning must be evaluated on a case-by-case basis due to the extensive variability in component design, operation, and performance requirements. Preconditioning of pumps may include filling and venting of pump casings, venting of discharge piping, speed adjustments, lubrication, adjustment of seals or packing, etc. Preconditioning of

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valves may include stem lubrication, cycling of the valve prior to the "test" stroke, charging of accumulators, attachment of electrical leads or jumpers, etc.

Factors to be considered in the evaluation of preconditioning acceptability include component size and type, actuator or driver type, design requirements, required safety functions, safety significance, the nature, benefit, and consequences of the preconditioning activity, the frequencies of the test and preconditioning activities, applicable service and environmental conditions, previous performance data and trends, etc.

Lubrication of a valve stem provides an example of the variability of whether or not a preconditioning activity is acceptable. For example, lubrication of the valve stem of an AC-powered MOV during refueling outages for a valve that is exercise tested quarterly would normally be considered acceptable, unless service or environmental conditions could cause accelerated degradation of its performance. Lubrication of a valve stem each refueling outage for an MOV that is exercise tested on a refueling outage frequency may be unacceptable if the lubrication is always performed prior to the exercise test. Lubrication of a valve stem for an AOV prior to exercise testing is likely to be unacceptable, unless it can be documented that the preconditioning (i.e., maintenance or diagnostic testing) can provide equal or better information regarding the as-found condition of the valve. Manipulation of a check valve or a vacuum breaker that uses a mechanical exerciser to measure breakaway force prior to surveillance testing would be unacceptable preconditioning. Additional information regarding preconditioning of MOVs may be found in Reference 4.

**Position:**

1. Preconditioning **SHALL** be avoided unless an evaluation has been performed to determine that the preconditioning is acceptable. Appendix 1 to this Technical Position may be used to document this evaluation. In cases where the same information applies to more than one component, a single acceptability evaluation may be performed and documented.
2. Evaluations **SHALL** be prepared, reviewed and approved by persons with the appropriate level of knowledge and responsibility. For example, persons preparing an evaluation should hold a current certification in the area related to the activity. Reviewers should be certified in a related area.
3. The evaluation **SHALL** be approved by a Manager or designee.
4. If it is determined that an instance of preconditioning has occurred without prior evaluation, the evaluation **SHALL** be performed as soon as practicable following discovery. If the evaluation concludes that the preconditioning is unacceptable, an IR shall be written to evaluate the condition and identify corrective actions.

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**References:**

1. NRC Information Notice 97-16, "Preconditioning of Plant Structures, Systems, and Components before ASME Code Inservice Testing or Technical Specification Surveillance Testing".
2. NUREG-1482, Revision 1 (January, 2005), Section 3.5 "Pre-Conditioning of Pumps and Valves".
3. NRC Inspection Manual Part 9900: Technical Guidance, "Maintenance – Preconditioning of Structures, Systems and Components Before Determining Operability".
4. ER-AA-302-1006, "Generic Letter 96-05 Program Motor-Operated Valve Maintenance and Testing Guidelines"
5. ER-AA-321, "Administrative Requirements for Inservice Testing"

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**CTP-IST-001 APPENDIX 1  
EVALUATION OF PRECONDITIONING ACCEPTABILITY**

|  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| Description of activity:   |                          |                          |                          |
| <b>Section 1: NRC Inspection Manual Part 9900 Review:</b>  |                          |                          |                          |
| Answer the following questions to determine the acceptability of the preconditioning activity based on Section D.2 of Reference 3.   |                          |                          |                          |
| <i>Question</i>  | <i>Yes</i>               | <i>No</i>                | <i>Not Determined</i>    |
| 1. Does the alteration, variation, manipulation or adjustment ensure that the component will meet the surveillance test acceptance criteria?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Would the component have failed the surveillance without the alteration, variation, manipulation or adjustment?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Does the practice bypass or mask the as-found condition?  | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 4. Is the alteration, variation, manipulation or adjustment routinely performed just before the testing?   | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 5. Is the alteration, variation, manipulation or adjustment performed only for scheduling convenience?   | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| If all the answers to Questions 1 thru 5 are No, the activity is acceptable; go to Section 3. Otherwise, continue to Section 2.  |                          |                          |                          |
| <b>Section 2: Additional Evaluation</b>  |                          |                          |                          |
| The following questions may be used to determine if preconditioning activities that do not meet the screening criteria of Section 1 are acceptable   |                          |                          |                          |
| <i>Question</i>  | <i>Yes</i>               | <i>No</i>                |                          |
| 6. Is the alteration, variation, manipulation or adjustment required to prevent personnel injury or equipment damage? If yes, explain below.   | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 7. Does the alteration, variation, manipulation or adjustment provide performance data or information that is equivalent or superior to that provided by the surveillance test? If yes, explain below.                                     | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 8. Is the alteration, variation, manipulation or adjustment being performed to repair, replace, inspect or test an SSC that is inoperable or is otherwise unable to meet the surveillance test acceptance criteria? If yes, explain below. | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 9. Is there other justification to support classification of the alteration, variation, manipulation or adjustment as acceptable preconditioning? If yes, explain below and provide references.  | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| Explanation / Details: (attach additional sheets as necessary)   |                          |                          |                          |
| Conclusion: The preconditioning evaluated herein <u>(is / is not)</u> acceptable. (Circle one)   |                          |                          |                          |
| <b>Section 3: Review / Approve</b>   |                          |                          |                          |
| Prepared by:   | Date:                    |                          |                          |
| Reviewed by:   | Date:                    |                          |                          |
| Approved by:   | Date:                    |                          |                          |

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**ATTACHMENT 13**

**Number:** CTP-IST-002, Rev. 1

**Title:** Quarterly Pump Testing Under Full Flow Conditions

**Applicability:** ASME OM-1995 Code and Later, Subsection ISTB

**Background:** Pumps included in the scope of the IST Program are classified as Group A or Group B. The OM Code defines a Group A pump as a pump that is operated continuously or routinely during normal operation, cold shutdown, or refueling operations. A Group B pump is defined as a pump in a standby system that is not operated routinely except for testing.

Testing of pumps in the IST Program is performed in accordance with Group A, Group B, comprehensive or preservice test procedures. In general, a Group A test procedure is intended to satisfy quarterly testing requirements for Group A pumps, a Group B test procedure is intended to satisfy quarterly testing requirements for Group B pumps and a comprehensive test procedure is required to be performed on a frequency of once every two years for all Group A and Group B pumps. The Code states that when a Group A test is required a comprehensive test may be substituted; when a Group B test is required a comprehensive test or a Group A test may be substituted. A preservice test may be substituted for any inservice test. The Corporate Exelon position on preservice testing requirements for pumps in the IST Program is provided in CTP-IST-005.

Subsection ISTB provides different acceptance, alert and required action ranges for centrifugal, vertical line shaft, non-reciprocating positive displacement and reciprocating positive displacement pumps, for Group A, Group B and comprehensive pump tests. In each case, the acceptance bands for flow and differential or discharge pressure for the comprehensive test are narrower than those for the Group A and Group B tests. Since comprehensive pump test requirements did not exist prior to the OM-1995 Code, and since the frequency of comprehensive tests is once every two years, most stations have a limited history of comprehensive pump test performance. Thus, pumps that have demonstrated satisfactory results during quarterly testing over a period of several years may fail a comprehensive test while continuing to operate at the same performance level.

**Position:** The following points summarize the Exelon position on full-flow testing of pumps:

1. Any specific pump is either Group A or Group B; it cannot be both. Any pump that is operated routinely for any purpose, except for the performance of inservice testing, is a Group A pump. A pump cannot be classified as Group A for certain modes of operation and Group B for other modes of operation (e.g., pumps used for shutdown cooling are Group A pumps), unless authorized by means of an NRC-approved Relief Request.
2. Under certain circumstances, similar or redundant pumps may be classified differently. For example, if a station has four identical RHR pumps with two used for shutdown cooling and two dedicated to ECCS service, the shutdown cooling pumps would be Group A, whereas the dedicated ECCS pumps

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would be Group B provided they were maintained in standby except when performing inservice testing.

3. Quarterly testing of Group A pumps shall be performed in accordance with a Group A or comprehensive test procedure. Post-maintenance testing of Group A pumps shall be performed in accordance with a Group A, a comprehensive, or a preservice test procedure.
4. Quarterly testing of Group B pumps shall be performed in accordance with a Group B, Group A, or comprehensive test procedure. Post-maintenance testing of Group B pumps shall be performed in accordance with a Group A, a comprehensive, or a preservice test procedure.
5. Credit can only be taken for a comprehensive test if all of the OM Code requirements for a comprehensive test are met, including flow, instrument range and accuracy, and acceptance limits.

Regardless of test conditions, quarterly pump testing is required to meet the acceptance criteria specified for Group A or Group B pumps, as applicable, in the edition/addenda of the OM Code in effect at the Plant. More restrictive acceptance criteria may be applied optionally if desired to improve trending or administrative control.

The ASME OM Code has identified quarterly and comprehensive pump testing as distinctly separate tests with separate frequency and instrumentation requirements and separate acceptance criteria. When performing a quarterly (Group A or Group B) test under full flow conditions, it may be apparent that a comprehensive test limit was exceeded. In such cases, **ISSUE** an IR to describe and evaluate the condition and potential compensatory measures (e.g., establishing new reference values) prior to the next scheduled comprehensive test. No additional corrective actions are required.

#### References:

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTB.



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**ATTACHMENT 13**

**Number:** CTP-IST-003, Rev. 0

**Title:** Quarterly Testing of Group B Pumps

**Applicability:** ASME OM-1995 Code and Later

**Background:** Pumps included in IST Programs that must comply with the 1995 Edition of the ASME OM Code and later are required to be classified as either Group A or Group B pumps. The OM Code defines a Group A pump as a pump that is operated continuously or routinely during normal operation, cold shutdown, or refueling operations. A Group B pump is defined as a pump in a standby system that is not operated routinely except for testing.

Testing of pumps is performed in accordance with Group A, Group B, comprehensive or preservice test procedures. In general, a Group A test procedure is intended to satisfy quarterly testing requirements for a Group A pump, a Group B test procedure is intended to satisfy quarterly testing requirements for a Group B pump, and a comprehensive test procedure is required to be performed on a frequency of once every two years for all Group A and Group B pumps. A Group A test procedure may be substituted for a Group B procedure and a comprehensive or preservice test procedure may be substituted for a Group A or a Group B procedure at any time.

A Group A test procedure is essentially identical to the quarterly pump test that was performed in accordance with OM-6 and earlier Code requirements. Group B testing was introduced to the nuclear industry when the NRC endorsed the OM-1995 Edition with OMA-1996 Addenda in 10 CFR 50.55a(b)(3). The intent of the Group B test was to provide assurance that safety related-pumps that sit idle essentially all of the time (e.g. ECCS pumps) would be able to start on demand and achieve a pre-established reference condition. The requirements for Group B testing were significantly relaxed when compared with the Group A (traditional) pump test requirements based on the assumption that there were no mechanisms or conditions that would result in pump degradation while the pump sat idle.

Strong differences of opinion regarding the intent and requirements for Group B testing developed and have persisted since the beginning. These differences span the industry, the NRC, and even members of the OM Code Subgroup-ISTB who created them. One opinion is that the Group B test is intended to be a "bump" test in which the pump is started, brought up to reference flow or pressure, and then stopped. The opposing opinion is that the Group B test requires the pump to be brought to the reference flow or pressure followed by recording and evaluation of both the flow and pressure readings. Both opinions can be supported by the applicable OM Code verbiage. However, NRC personnel have expressed a reluctance to accept the "bump" test interpretation.

**Position:** Group B pump testing should be performed as follows:

1. When performing a Group B pump test, both hydraulic test parameters (i.e., flow and differential pressure OR flow and discharge pressure) shall be

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measured and evaluated in accordance with the applicable Code requirements for the pump type.

2. Vibration measurements are not required for Group B pump tests. Vibration measurements may continue to be taken optionally. In the event that a vibration reading exceeds an alert or required action limit for the comprehensive test for the pump being tested, an IR shall be written and corrective action taken in accordance with the CAP process.

**References:**

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTB

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**ATTACHMENT 13**

**Number:** CTP-IST-004, Rev. 1

**Title:** Classification of Pumps: Centrifugal vs. Vertical Line Shaft

**Applicability:** All Exelon IST Programs

**Background:** Early Code documents that provided requirements for inservice testing of pumps did not differentiate between pump types. Subsection IWP of the ASME Boiler and Pressure Vessel Code, Section XI, required the measurement of flow, differential pressure and vibration and comparison of the measured data with reference values, similar to the way in which centrifugal pump testing is currently performed. Some additional measurements were required (e.g., bearing temperature, lubrication level or pressure) which were later determined to be of minimal value to IST. A major limitation in the earlier Code was that the same parameters and acceptance criteria were specified for all pumps.

With the development of the OM Standards (OM-1, OM-6, OM-10, etc.), it was recognized that pumps of different design performed differently and required different measurement criteria to determine acceptable performance. For example, discharge pressure was determined to be a more representative measurement of performance for a positive displacement pump than differential pressure. Part 6 of the OM Standards (OM-6), also introduced different criteria for inservice testing of centrifugal and vertical line shaft pumps. Unfortunately, it did not provide any definition for a vertical line shaft pump.

The definition of "vertical line shaft" pump was first incorporated into the OM-1998 Edition of the OM Code as "a vertically suspended pump where the pump driver and pump element are connected by a line shaft within an enclosed column." This definition failed to eliminate much of the uncertainty in determining whether certain pumps were vertically-oriented centrifugal pumps or vertical line shaft pumps. Further confusion was created by the choice of wording used in the OM Code Tables that specify the acceptance criteria for centrifugal and vertical line shaft pumps.

**Position:** Code requirements for vibration measurement provide the clearest indication of the difference between a centrifugal pump and a vertical line shaft pump. On centrifugal pumps, vibration measurements are required to be taken in a plane approximately perpendicular to the rotating shaft in two approximately orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible pump thrust bearing housing. On vertical line shaft pumps, measurements are required to be taken on the upper motor-bearing housing in three approximately orthogonal directions, one of which is the axial direction. Therefore, a pump which is connected to its driver by a vertically-oriented shaft in which vibration measurements must be taken on the pump motor due to the inaccessibility of the pump bearings will be classified as a vertical line shaft pump. For plants using the 1998 Edition of the OM Code through the OMB-2003 addenda, Table ISTB-5100-1 applies to all horizontally and vertically-oriented centrifugal pumps; Table ISTB-5200-1 applies to vertical line shaft pumps. For plants using the 2004 Edition of the OM Code and later, Table ISTB-5121-1 applies to all horizontally and vertically-oriented centrifugal pumps; Table ISTB-5221-1 applies to vertical line shaft pumps.

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**References:**

1. ASME OMa-1988, ASME/ANSI Operation and Maintenance of Nuclear Power Plants, Part 6, Inservice Testing of Pumps in Light-Water Reactor Power Plants.
2. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTB.

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**ATTACHMENT 13**

**Number:** CTP-IST-005, Rev. 1

**Title:** Preservice Testing of Pumps

**Applicability:** OM-1995 Code and Later

**Background:** Requirements for preservice testing of pumps have been stated in ASME Code documents since the beginning. However, the 1995 Edition of the OM Code significantly expanded the scope of preservice testing by introducing the requirement that centrifugal and vertical line shaft pumps in systems where resistance can be varied establish a pump curve by measuring flow and differential pressure at a minimum of five points. These points are required to be from pump minimum flow to at least design flow, if practicable. At least one point is to be designated as the reference point for future inservice tests.

The OM Codes further state that it is the responsibility of the Owner to determine if preservice testing requirements apply when reference values may have been affected by repair, replacement, or maintenance on a pump. A new reference value or set of values is required to be determined or the previous reference value(s) reconfirmed by a comprehensive or Group A test prior to declaring the pump operable.

**Position:** Whenever a pump's reference values may have been affected by repair, replacement, or maintenance, a preservice test **SHALL** be performed in accordance with the preservice test requirements of Reference 1 of this CTP for the applicable pump design. If it is determined through evaluation that the maintenance activity did not affect the existing reference values, then the previous reference value(s) **SHALL** be reconfirmed by a comprehensive or Group A test prior to declaring the pump operable. Evaluation that the maintenance activity did not affect the pump's reference values **SHALL BE DOCUMENTED**.

Since a preservice test may be substituted for any other required inservice test, this test could be performed in place of any quarterly or comprehensive test. Performing it in lieu of a comprehensive test would have minimal impact on test scope or schedule and would provide valuable information for subsequent evaluations of pump performance.

For centrifugal and vertical line shaft pumps in systems with variable resistance, one of the five points on the preservice test curve (preferably one between 100% and 120% of design flow but in no case less than 80% of design flow) **SHALL** be selected as the reference point for the comprehensive tests. If quarterly testing will be performed at full flow, then the same point should be selected for the quarterly pump tests. If quarterly testing cannot be performed at full flow, then another point on the preservice test curve **SHALL** be selected as the reference point for the quarterly tests.

**References:**

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTB.

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**ATTACHMENT 13**

**Number:** CTP-IST-006, Rev. 1

**Title:** Classification and Testing of Class 1 Safety/Relief Valves With Auxiliary Actuating Devices

**Applicability:** All Exelon IST Programs

**Background:** The definition for valve categories in the ASME Codes has been consistent since the beginning. Category A, B, C and D valves are basically defined the same now as they were in early editions/addenda of Section XI of the ASME Boiler and Pressure Vessel Code. Likewise, the requirement that valves meeting the definition for more than one category be tested in accordance with all the applicable categories has been consistent over time.

Due to a lack of clear testing requirements for Class 1 Safety/Relief Valves With Auxiliary Actuating Devices in early ASME Codes, these valves were historically classified as Category B/C. As relief valves, they were required to meet the Category C testing requirements; and since the auxiliary operators essentially put them in the classification of power-operated valves, Category B requirements were imposed to address stroke-time and position indication testing considerations.

**Position:** The B/C categorization of these valves was initially made due to a lack of specific Code requirements. However, with the publication of ASME OM Standard OM-1 in 1981, which identified specific requirements for these valves, it became irrelevant. All applicable testing requirements for these valves were specified in OM-1, which has been superseded by Appendix I of the ASME OM Code. Efforts of the Code to exempt these valves from Category B testing requirements further demonstrate their inapplicability. Therefore, these valves should be classified as Category C.

**References:**

1. ASME OM-1987, ASME/ANSI Operation and Maintenance of Nuclear Power Plants, Part 1, Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices.
2. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTC and Appendix I.

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**ATTACHMENT 13**

**Number:** CTP-IST-007, Rev. 1

**Title:** Skid-Mounted Components

**Applicability:** All Exelon IST Programs

**Background:** The term "skid-mounted component" was coined to describe support components, such as pumps and valves for the purposes of IST, that function in the operation of a supported component in such a way that their proper functioning is confirmed by the operation of the supported component. For example, the successful operation of an emergency diesel-generator set confirms that essential support equipment, such as cooling water and lube oil pumps and valves, are functioning as required. The concept of "skid-mounted" is actually irrespective of physical location.

**Position:** Components that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident are required to be tested in accordance with the ASME Code-in-effect for the station's IST Program. It is not the intent of the skid-mounted exemption that it be used in cases where the specific testing requirements of the Code for testing of pumps and valves can be met. For example, if adequate instrumentation is provided to measure a pump's flow and differential pressure, and if required points for vibration measurement can be accessed, then invoking the skid-mounted exemption would be inappropriate.

The "skid-mounted" exclusion as stated in references 2 and 3, below, may be applied to pumps or valves classified as "skid-mounted" in the IST Program provided that they are tested as part of the major component and are justified to be adequately tested. Such components **SHALL** be listed in the Program Plan document and identified as skid-mounted. Pump or Valve Data Sheets which contain the justification regarding the adequacy of their testing **SHALL** be provided in the IST Bases Document.

**References:**

1. NUREG-1482 (Rev.0 and Rev.1), Section 3.4, Skid-Mounted Components and Component Subassemblies
2. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition OMa-1996 Addenda, ISTA 1.7, ISTC 1.2.
3. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1998 Edition and later, ISTA-2000 and ISTC-1200.

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**ATTACHMENT 13**

**Number:** CTP-IST-008, Rev. 1

**Title:** Position Verification Testing

**Applicability:** All Exelon IST Programs

**Background:** Valves with remote position indicators are required to be observed locally at least once every two years to verify that valve operation is accurately indicated. This local observation should be supplemented by other indications to verify obturator position. Where local observation is not possible, other indications shall be used for verification of valve operation.

**Position:** All valves within the scope of the IST Program that are equipped with remote position indicators, shall be tested. The testing shall clearly demonstrate that the position indicators operate as required and are indicative of obturator position. For example, a valve that has open and closed indication shall be cycled to demonstrate that both the open and closed indicators perform as designed, including both or neither providing indication when the valve is in mid-position. Valves that have indication in one position only shall be cycled to ensure that the indicator is energized/de-energized when appropriate. These requirements apply to all IST valves, regardless of whether they are classified as active or passive.

**References:**

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition with OMa-1996 Addenda, para ISTC 4.1.
2. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1998 Edition and later, para ISTC-3700.
3. NUREG-1482, Rev. 1, Section 4.2.8



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**ATTACHMENT 13**

**Number:** CTP-IST-009, Rev. 0

**Title:** ASME Class 2 & 3 Relief Valve Testing Requirements

**Applicability:** All Exelon IST Programs

**Background:** The ASME OM Code, Appendix I, provides requirements for Inservice Testing of ASME Class 1, 2, and 3 Pressure Relief Devices. The requirements for Class 1 pressure relief devices are identified separately from those for Classes 2 and 3. The requirements for Class 2 and 3 pressure relief devices are identified together.

This Technical Position applies only to ASME Class 2 and 3 safety and relief valves. It does not include vacuum breakers or rupture discs. Class 2 PWR Main Steam Safety Valves are also not included in this Technical Position because they are required to be tested in accordance with ASME Class 1 safety valve requirements.

**Position:** This Technical Position applies to the classification, selection, scheduling and testing of ASME Class 2 and 3 safety and relief valves only. For the purposes of this Technical Position, the term "relief valve" will be used to apply to both types.

Classification

**DETERMINE** whether or not the valve may be classified as a thermal relief. A thermal relief valve is one whose only over-pressure protection function is to protect isolated components, systems, or portions of systems from fluid expansion caused by changes in fluid temperature. If a relief valve is required to perform any other function in protecting a system or a portion of a system that is required to place the reactor in the safe shutdown condition, to maintain the safe shutdown condition, or to mitigate the consequences of an accident, it cannot be classified as a thermal relief valve.

Class 2 and Class 3 thermal relief valves are required to be **TESTED** or **REPLACED** every 10 years unless performance data indicates the need for more frequent testing or replacement. Details regarding whether a Class 2 or Class 3 thermal relief valve is tested or replaced and the bases for the associated frequency **SHALL** be documented in the IST Bases Document.

Grouping, sample expansion and the requirement to test 20% of the valves within any 48-month period do not apply to Class 2 and Class 3 thermal relief valves. Class 2 and 3 thermal relief valves may be optionally tested in accordance with the more conservative requirements for non-thermal relief valves if desired.

Non-thermal relief valves shall be grouped in accordance with the grouping criteria of Appendix I (same manufacturer, type, system application, and service media). Groups may range in size from one valve to all of the valves meeting the grouping criteria. Grouping criteria **SHALL** be documented in the IST Bases Document or other document that controls Class 2 and 3 IST relief valve testing.

If two valves are manufactured at the same facility to the same specifications, dimensions, and materials of construction but under a different manufacturer's name due to a merger or acquisition, the valves may be considered to meet the requirement for same manufacturer.

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Valves in systems containing air or nitrogen may be considered to have the same service media.

Selection

Valves **SHALL** be selected for testing such that the valve(s) in each group with the longest duration since the previous test are chosen first. This **SHALL INCLUDE** any valves selected due to sample expansion.

**IF** an exception to this requirement is necessary due to accessibility or scheduling considerations, **DOCUMENT** the reason and that the valves that should have been selected will not come due prior to the next opportunity to test them (e.g., the next outage).

Scheduling

Grace is **NOT** permitted for relief valve testing, unless authorized by an NRC-approved relief request.

All frequency requirements are test-to-test (i.e., they begin on the most recent date on which the valve was tested per Appendix I requirements and end on the date of the next Appendix I test).

All Class 2 or Class 3 relief valves in any group must be tested at least once every 10 years.

Valves within each group must be tested such that a minimum of 20% of the valves are tested within any given 48-month period.

If all of the valves in a group are removed for testing and replaced with pretested valves, the removed valves shall be tested within 12 months of removal from the system.

If less than all of the valves in a group are removed for testing and replaced with pretested valves, the removed valves shall be tested within 3 months of removal from the system or before resumption of electric power generation, whichever is later.

Testing of pretested valves must have been performed such that they will meet the 10 year and 20% / 48-month requirements for the entire time they are in service.

Testing of relief valves that is required to be performed during an outage **SHALL BE PERFORMED** as early in the outage as practicable in order to allow for contingency testing of additional valves in the event a scheduled valve fails its as-found test.

Testing

Testing **SHALL BE PERFORMED** using the same service media wherein the valve was installed.

Testing of additional valves due to failure of a scheduled valve to meet its as-found setpoint acceptance criteria **SHALL BE PERFORMED** in accordance with all applicable OM Code and Technical Specification requirements.

**References:**

1. ASME OM Code, 1995 Edition and later, Mandatory Appendix I, Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants

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**ATTACHMENT 13**

**Number:** CTP-IST-010, Rev. 0

**Title:** ERV and PORV Testing Requirements

**Applicability:** Exelon Stations with Electromatic Relief Valves or Power-Operated Relief Valves

**Background:** Electromatic Relief Valves (ERVs) and Power-Operated Relief Valves (PORVs) are used at nuclear plants to protect the Reactor Coolant pressure boundary from overpressure under various conditions. This may include preventing excessive challenges to BWR Main Steam Safety Valves and PWR Pressurizer Safety Valves during operation at power or preventing low temperature overpressure (LTOP) conditions from exceeding brittle fracture limits when the plant is cooled down.

ERVs and PORVs come in a variety of designs, which can make their categorization and testing in accordance with OM Code requirements challenging. Some are actual relief valves that are equipped with air operators to open the valves against spring force upon actuation by some pressure-sensing apparatus in the primary coolant system. Others may be motor-operated gate valves that open and close as a result of signals generated at predetermined pressure settings. The key to determining the proper category of the ERV or PORV is not the nomenclature of the valve (i.e., "relief valve"), but the actual physical design of the valve and its actuator.

Power-operated relief valves were not addressed by the ASME Codes until the OMa-1996 Addenda. Even then, they were only alluded to by the addition of an exclusion to paragraph ISTC 1.2 which stated: "Category A and B safety and relief valves are excluded from the requirements of ISTC 4.1, Valve Position Verification and ISTC 4.2, Inservice Exercising Test." Up to this point, Owners typically categorized these valves as Category B/C, assigned the position verification and exercise test requirements for the Category B portion, and then obtained Relief Requests from the NRC to not perform them due to their impracticability. The Relief Requests provided a detailed description of the proposed alternative techniques, which generally matched Category C requirements for valves with auxiliary actuators.

Paragraph ISTC-5110 was introduced in the OM-1998 Edition of the OM Code which stated: "Power-operated relief valves shall meet the requirements of ISTC-5100 for the specific Category B valve type and ISTC-5240 for Category C valves." This essentially added no value, since this was already the practice.

OMb-2000 added the following definition of a power-operated relief valve to paragraph ISTC-2000, Supplemental Definitions: "a power-operated valve that can perform a pressure relieving function and is remotely actuated by either a signal from a pressure sensing device or a control switch. A power-operated relief valve is not capacity certified under ASME Section III overpressure protection requirements." In addition, OMB-2000 added the following to paragraph ISTC-3510: "Power-operated relief valves shall be exercise tested once per fuel cycle."

The addition of exclusions, definitions and test requirements to the Code for these valves has only tended to make actual testing requirements more conflicting or confusing. These valves are still being categorized as Category B, C or B/C (with

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a few A's or A/C's) throughout the industry with testing requirements assigned accordingly and relief still being sought where deemed appropriate.

**Position:**

Each Station **MUST DETERMINE** the proper valve category or categories for its ERVs and/or PORVs based on valve and actuator design, and **IDENTIFY** appropriate testing requirements and methodologies appropriate to that categorization. The following table summarizes the possible categories that can be applied to an ERV or PORV, whether or not the valve meets the definition of a PORV as defined in ISTC-2000, and the associated test requirements:

| Category |   | Meets PORV Def. | Test Requirements                                   |                     | Comments  |
|----------|---|-----------------|---|---------------------|---|
| B        | C |                 | B   | C                   |   |
| X        |   | No              | ISTC-3700<br>ISTC-5120*<br>ISTC-5130*<br>ISTC-5140* |                     | Valve is not a safety or relief valve; actuator is MO, AO or HO. Does <b>not</b> meet Code definition of PORV (ISTC-2000). Exercise test quarterly per ISTC-3510, or defer to Cold Shutdown or RFO per ISTC-3521. |
| X        |   | Yes             | ISTC-3700<br>ISTC-5110                              |                     | Valve meets Code definition of PORV (ISTC-2000). Exercise test once per fuel cycle per ISTC-3510 and ISTC-5110.   |
|          | X | No              |   | STC-5240<br>App. I  | Valve is a relief valve with AO or HO actuator. Does <b>not</b> meet Code definition of PORV (ISTC-2000). Exempt from Cat B testing (ISTC-3500/ISTC-3700) per ISTC-1200.  |
| X        | X | No              |   | ISTC-5240<br>App. I | Valve is a relief valve with AO or HO actuator. Does <b>not</b> meet Code definition of PORV (ISTC-2000). Exempt from Cat B testing (ISTC-3500/ISTC-3700) per ISTC-1200.  |
| X        | X | Yes             | ISTC-3700<br>ISTC-5110                              |                     | Should not be classified Category C. Relief valves do not meet the Code definition of PORV (ISTC-2000).   |

\* As applicable

A Relief Request **SHALL BE SUBMITTED** for any ERV or PORV that does not meet the applicable test requirements specified in the above table.

A detailed description of the rationale behind the category designation, the assignment of testing requirements, and how they are satisfied **SHALL BE PROVIDED** on the applicable IST Bases Document Valve Data Sheets.

**References:**

1. ASME OM Code, 1995 Edition and later, Subsection ISTC, Inservice Testing of Valves in Light-Water Reactor Nuclear Power Plants
2. ASME OM Code, 1995 Edition and later, Mandatory Appendix I, Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants

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**ATTACHMENT 13**

**Number:** CTP-IST-011, Rev. 0

**Title:** Extension of Valve Exercise Test Frequencies to Cold Shutdown or Refueling Outage

**Applicability:** All Exelon IST Programs

**Background:** Requirements for exercise testing of Category A and B power-operated valves and check valves (Category C) are stipulated in the OM Code as follows:

ISTC-3510 states: "Active Category A, Category B and Category C check valves shall be exercised nominally every 3 mo, except as provided by paras. ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3570, ISTC-5221 and ISTC-5222." Plant Technical Specifications for IST identify the 3 month frequency as once per 92 days with allowance for a 25% extension.

ISTC-3520 is divided into ISTC-3521 for Category A and Category B valves, and ISTC-3522 for Category C check valves. ISTC-3521 states: "Category A and B valves shall be tested as follows:

- (a) full-stroke exercising of Category A and Category B valves during operation at power to the position(s) required to fulfill its function(s).
- (b) if full-stroke exercising during operation at power is not practicable, it may be limited to part-stroke during operation at power and full-stroke during cold shutdowns.
- (c) if exercising is not practicable during operation at power, it may be limited to full-stroke exercising during cold shutdowns.
- (d) if exercising is not practicable during operation at power and full-stroke during cold shutdowns is also not practicable, it may be limited to part-stroke during cold shutdowns and full-stroke during refueling outages.
- (e) if exercising is not practicable during operation at power or cold shutdowns, it may be limited to full-stroke during refueling outages.

Paragraphs (f) through (h) provide additional limitations on cold shutdown and refueling outage exercise testing.

ISTC-3522 provides essentially the same requirements for check valves except that the requirement to consider partial-stroke exercising is not included.

ISTC-3540 stipulates exercise testing frequency requirements for manual valves. ISTC-3550 discusses valves in regular use, ISTC-3570 addresses valves in systems out-of-service, ISTC-5221 addresses special frequency considerations for check valves in a sample disassembly and inspection program, and ISTC-5222 addresses check valves in a condition monitoring program.

ISTC-3521 makes it clear that the intent of the Code is for valves to be exercised quarterly unless it is impracticable to do so. When it is impracticable, the graduated approach of ISTC-3521 through cold shutdown and refueling frequencies and partial and full-stroke exercising impose an obligation on the owner to perform at least some testing as frequently as practicable.

The determination of "practicability" is left to the owner. The industry has universally adopted the practice of writing Cold Shutdown and Refueling Outage

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Justifications to document conditions that they believe to be "impracticable". There are no Code or regulatory definitions of impracticability nor are there any Code or regulatory requirements to prepare Cold Shutdown or Refueling Outage Justifications. However, Reference 2 provides a good deal of useful guidance regarding a regulatory opinion of what constitutes it. Merriam-Webster defines "impracticable" as (1) impassable or (2) not practicable; incapable of being performed or accomplished by the means employed or at command".

**Position:** The following direction **SHALL BE IMPLEMENTED** when establishing exercise test frequencies for power-operated Category A and B valves and Category C check valves:

1. Stations **SHALL DETERMINE** the practicability of performing exercise testing of all valves in their IST Programs in accordance with the Code.
2. When preparing or performing a technical revision to a Cold Shutdown or Refueling Outage Justification, the Station IST Engineer **SHALL OBTAIN** a peer review from the Corporate IST Engineer and at least one other Site IST Program Engineer.
3. Cold Shutdown and Refueling Outage Justifications **SHALL PROVIDE** a strong, clear technical case for the testing deferral. References to NUREG-1482 may be made to support the justification; however, it is not to be cited as the justification itself.

**References:**

1. ASME OM Code, 1995 Edition and later, Subsection ISTC, Inservice Testing of Valves in Light-Water Reactor Nuclear Power Plants
2. NUREG 1482, Revision 1, Guidelines for Inservice Testing at Nuclear Power Plants, Sections 2.4.5 and 3.1.

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**ATTACHMENT 13**

**Number:** CTP-IST-012, Rev. 0

**Title:** Use of ASME OM Code Cases for Inservice Testing

**Applicability:** All Exelon IST Programs

**Background:** Code Cases are issued to clarify the intent of existing Code requirements or to provide alternatives to those requirements. Adoption of the alternative requirements provided by Code Cases are optional; they only become mandatory when an owner commits to them. Code Cases are included as a separate section at the end of published editions/addenda of the OM Code for the user's convenience. They are not a part of any Code edition or addenda and endorsement of specific editions/ addenda of the OM Code by the NRC does not constitute endorsement of the Code Cases.

If the Code Committee desires to make the requirements of a Code Case mandatory, those requirements are incorporated into the Code at a later date. For example, Code Case OMN-1, Alternative Rules for Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants, was incorporated into the 2009 Edition of the OM Code as Mandatory Appendix III. Appendix III will become mandatory for IST Programs when 10 CFR 50.55a imposes the requirement that 10-year interval updates meet the requirements of the 2009 Edition of the ASME Code or later. Until such time, plants may optionally implement OMN-1 or may continue to perform stroke-time testing and position indication verification in accordance with Subsection ISTC requirements.

In order for an OM Code Case to be used in an Inservice Testing Program at a nuclear power plant, it must be authorized by ASME and approved by the NRC. A Code Case is authorized for use by ASME as soon as it is published, provided certain limitations included in the Code Case, such as the applicability statement, are met. OM Code Cases are published on the ASME Web site at <http://cstools.asme.org> and in Mechanical Engineering magazine as they are issued.

Efforts to clarify or simplify the use of Code Cases have instead created conflicting requirements which need to be addressed in order to avoid noncompliance with the Code or CFR. These include:

- The Code of Federal Regulations, paragraph 10 CFR 50.55a(b)(6) states that Licensees may apply ASME OM Code Cases listed in Regulatory Guide 1.192 without prior NRC approval subject to certain conditions. One condition states that when a licensee initially applies a listed Code case, the licensee shall apply the most recent version of the Code case "incorporated by reference in this paragraph". A second condition states that if a licensee has previously applied a Code case and a later version of the Code case is "incorporated by reference in this paragraph", the licensee may continue to apply, to the end of the current 120-month interval, the previous version of the Code case or may apply the later version of the Code case, including any NRC-specified conditions placed on its use. A third condition restricts the use of annulled Code cases to those that were in use prior to their annulment.

It is not clear what "incorporated by reference in this paragraph" is referring to. If "this paragraph" means 10 CFR 50.55a(b)(6), this would refer to Reg

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Guide 1.192. If it refers more broadly to 10 CFR 50.55a(b), this would also include 10CFR 50.55a(b)(3), which contains the endorsement of the latest edition/addenda of the OM Code approved for use by the NRC. In the first case, Reg Guide 1.192 was published in June 2003 with no revisions to date. Versions of the Code cases referenced therein have all exceeded their expiration dates and are not applicable to current Code editions. In the latter case, since Code Cases are independent of Code editions/addenda, there is a disconnect between approval of Code versus Code Cases.

- Requirements for the use of Code Cases are stipulated in the body of the OM Code. In all cases from the OM-1995 Edition through the OMa-2011 Addenda, it is required that “Code Cases shall be applicable to the edition and addenda specified in the inservice test plan” and “Code Cases shall be in effect at the time the inservice test plan is filed”. These requirements are almost never met.
- Code Cases provided as attachments up to and including the OMb-2006 Addenda contained expiration dates. These dates are usually prior to the time it is desired to use the Code Case.
- Each Code Case contains an applicability statement. Even in the latest Edition/addenda of the Code incorporated by reference in 10 CFR 50.55a, these statements usually indicate that the Code Case applies to earlier versions of the Code than what is required to be used.

Despite the inconveniences in implementing Code Cases, they often provide alternatives to the Code that are technically superior and highly desirable from a cost-efficiency perspective. Therefore, each plant should review the potential use of Code Cases with Corporate Engineering, particularly when in the process of performing 10-year updates.

**Position:** The following requirements **SHALL BE IMPLEMENTED** in order to use ASME OM Code Cases at Exelon stations:

1. All Code Cases used by a Station for their IST Program **SHALL BE LISTED** in the IST Program Plan.
2. Code Case expiration dates, applicability statements, and the Edition/addenda of the Code-in-effect for a Station’s IST Program **SHALL** all be compatible for Code Cases implemented in an IST Program **OR** a Relief Request **SHALL BE SUBMITTED** to use the Code Case in accordance with Reference 2 of this CTP.

**References:**

1. ASME OM Code, 1995 Edition and later, Subsection ISTA, General Requirements
2. ER-AA-321, Administrative Requirements for Inservice Testing.



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**ATTACHMENT 13**

**Number:** CTP-IST-013, Rev. 0

**Title:** Exercise Testing Requirements for Valves with Fail-Safe Actuators

**Applicability:** All Exelon IST Programs

**Background:** Valves with fail-safe positions usually have actuators that use the fail-safe mechanism to stroke the valve to the fail-safe position during normal operation. For example, an air-operated valve that fails closed may use air to open the valve against spring pressure. When the actuator is placed in the closed position, air is vented from the diaphragm and the spring moves the obturator to the closed position.

The fail-safe test is generally an integral part of the stroke time exercise test and is thus performed at the same frequency. Where the exercise test is performed less frequent than every 3 months, a cold shutdown justification, refueling outage justification, or relief request is required. The same justification for the stroke time exercise test would also apply to the fail-safe test.

**Position:** In cases where normal valve operation moves the valve to the fail-safe position by de-energizing the operator electrically, by venting air, or both (e.g., a solenoid valve in the air supply system of a valve operator moves to the vent position on loss of power), no additional fail-safe testing is required.

In cases where a fail-safe actuator does not operate as an integral part of normal actuator operation, the fail-safe feature(s) must be tested in a manner that demonstrates proper operation of each component that contributes to the fail-safe operation. The means used to meet this requirement shall be described in the IST Bases Document.

**References:**

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTC.

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**ATTACHMENT 13**

**Number:** CTP-IST-014, Rev. 0

**Title:** Bi-directional Testing of Check Valves to Their Safety and Non-Safety Related Positions

**Applicability:** All Exelon IST Programs

**Background:** This CTP addresses those cases in which inservice testing of check valves is performed in accordance with the requirements of ISTC-5221. It does not address these issues for check valves that are included in a Condition Monitoring Program. References 2 and 3 of this CTP provide additional information regarding check valve testing and Condition Monitoring.

The OM Code changed the focus of inservice testing of check valves from the ability to demonstrate that a check valve was capable of being in its safety-related position to demonstrating that the obturator was capable of free, unobstructed movement in both directions. This was accomplished by introducing a bidirectional testing requirement to inservice testing of check valves. Confirmation of this change in focus is evidenced by the fact that the Code required frequency for bi-directional testing of check valves is the lesser of the frequencies that the open direction and close direction tests can be performed. In other words, if a check valve is capable of being tested in the open direction quarterly but can only be tested closed during refueling outages, the Code required frequency for the bidirectional test is every refueling outage irrespective of the valve's safety position(s).

Condition Monitoring is the preferred method for check valve testing and inspection. For check valves that are not in a Condition Monitoring Program, the OM Code provides three options: flow/flow reversal, use of an external mechanical exerciser, and sample disassembly/examination. Of these, the flow and mechanical exerciser methods are preferred; the Code limits sample disassembly/ examination to those cases where the others are impractical. In all of these non-Condition Monitoring methods, demonstration of unobstructed obturator travel in the open and closed directions is required.

**Position:** The following requirements **SHALL BE MET** when implementing this CTP:

1. When using flow to demonstrate opening of a check valve with an open safety function, **OBSERVE** that the obturator has traveled to **EITHER** the full open position **OR** to the position required to perform its intended safety function(s).

Travel to the position required to perform its intended safety function(s) is defined as the minimum flow required to mitigate the system's most limiting accident requirements. For example, if three different accident scenarios called for flows of 300, 600 and 1000 gpm respectively, the required test flow would be 1000 gpm.

The full open position is defined as the point at which the obturator is restricted from further travel (e.g., hits the backstop). Methods for demonstrating travel to the full open position must be qualified if less than required accident flow is used.

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2. When using flow to demonstrate that the obturator of a valve that does not have an open safety function has traveled open, the test **MUST DEMONSTRATE** that the obturator is unimpeded.
3. Tests for check valve closure **MUST DEMONSTRATE** that the check valve has travelled to the closed position, not merely that it is in the closed position.
4. Whenever design requirements are used for IST acceptance criteria, instrument accuracy **MUST BE CONSIDERED**. This can be accomplished by determining that sufficient margin was included in the design calculation or by adding a correction to the IST acceptance criteria.
5. Non-intrusive methods used to credit obturator position **SHALL BE QUALIFIED**. Documentation of the means used to qualify the test method(s) shall be documented in the IST Bases Document.
6. The Code requirement satisfied for each check valve, identification of the method used to satisfy the Code requirement, and a description of how the method satisfies the requirement **SHALL BE PROVIDED OR REFERENCED** on the Valve Data Sheet in the IST Bases Document for each check valve..

**References:**

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTC.
2. ER-AA-321, Administrative Requirements for Inservice Testing
3. ER-AA-321-1005, Condition Monitoring for Inservice Testing of Check Valves

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**ATTACHMENT 14**  
**INSERVICE TESTING PUMP TABLE**

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**Attachment 14  
Inservice Testing Pump Table**

**System 212 Core Spray (Page 1)**

| Pump EPN       | Test Group | Safety Class | Pump Type | Pump Driver | P&ID       | P&ID Coord. | Test Type  | Test Freq. | Relief Request | Tech Pos. | Comments |
|----------------|------------|--------------|-----------|-------------|------------|-------------|--|------------|----------------|-----------|----------|
| <b>P-20-1A</b> | AB         | 2            | C         | M           | GE 885D781 | C4          | Differential Pressure                            | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CORE SPRAY PUMP NZ01-A         |            |                |           |          |
| <b>P-20-1B</b> | AB         | 2            | C         | M           | GE 885D781 | F2          | Differential Pressure                            | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CORE SPRAY PUMP NZ01-B         |            |                |           |          |
| <b>P-20-1C</b> | AB         | 2            | C         | M           | GE 885D781 | C4          | Differential Pressure                            | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CORE SPRAY PUMP NZ01-C         |            |                |           |          |
| <b>P-20-1D</b> | AB         | 2            | C         | M           | GE 885D781 | F3          | Differential Pressure                            | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CORE SPRAY PUMP NZ01-D         |            |                |           |          |
| <b>P-20-2A</b> | AB         | 2            | C         | M           | GE 885D781 | C5          | Differential Pressure                            | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CORE SPRAY BOOSTER PUMP NZ03-A |            |                |           |          |
| <b>P-20-2B</b> | AB         | 2            | C         | M           | GE 885D781 | G4          | Differential Pressure                            | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CORE SPRAY BOOSTER PUMP NZ03-B |            |                |           |          |
| <b>P-20-2C</b> | AB         | 2            | C         | M           | GE 885D781 | D5          | Differential Pressure                            | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CORE SPRAY BOOSTER PUMP NZ03-C |            |                |           |          |
| <b>P-20-2D</b> | AB         | 2            | C         | M           | GE 885D781 | F4          | Differential Pressure                            | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration  | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CORE SPRAY BOOSTER PUMP NZ03-D |            |                |           |          |

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**Attachment 14  
Inservice Testing Pump Table**

**System 213 Standby Liquid Control (Page 1)**

| Pump EPN                                    | Test Group | Safety Class | Pump Type | Pump Driver | P&ID       | P&ID Coord. | Test Type          | Test Freq. | Relief Request | Tech Pos. | Comments |
|---|------------|--------------|-----------|-------------|------------|-------------|--------------------|------------|----------------|-----------|----------|
| <b>P-19-1A</b>                              | AB         | 2            | PDN       | M           | GE 148F723 | E-5         | Discharge Pressure | Q          | PR-01          |           |          |
|   |            |              |           |             |            |             | Flow Rate          | Q          | PR-01          |           |          |
|   |            |              |           |             |            |             | Vibration          | Q          | PR-01          |           |          |
| Pump Description: LIQUID POISON PUMP NP02-A |            |              |           |             |            |             |                    |            |                |           |          |
| <b>P-19-1B</b>                              | AB         | 2            | PDN       | M           | GE 148F723 | D-5         | Discharge Pressure | Q          | PR-01          |           |          |
|   |            |              |           |             |            |             | Flow Rate          | Q          | PR-01          |           |          |
|   |            |              |           |             |            |             | Vibration          | Q          | PR-01          |           |          |
| Pump Description: LIQUID POISON PUMP NP02-B |            |              |           |             |            |             |                    |            |                |           |          |

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**Attachment 14  
Inservice Testing Pump Table**

**System 241 Containment Spray (Page 1)**

| Pump EPN       | Test Group | Safety Class | Pump Type | Pump Driver | P&ID       | P&ID Coord. | Test Type   | Test Freq. | Relief Request | Tech Pos. | Comments |
|----------------|------------|--------------|-----------|-------------|------------|-------------|---|------------|----------------|-----------|----------|
| <b>P-21-1A</b> | AB         | 2            | C         | M           | GE 148F740 | D-6         | Differential Pressure                             | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate   | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration   | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CONTAINMENT SPRAY PMP 1-1 (51A) |            |                |           |          |
| <b>P-21-1B</b> | AB         | 2            | C         | M           | GE 148F740 | B-6         | Differential Pressure                             | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate   | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration   | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CONTAINMENT SPRAY PMP 1-2 (51B) |            |                |           |          |
| <b>P-21-1C</b> | AB         | 2            | C         | M           | GE 148F740 | D-4         | Differential Pressure                             | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate   | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration   | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CONTAINMENT SPRAY PMP 1-3 (51C) |            |                |           |          |
| <b>P-21-1D</b> | AB         | 2            | C         | M           | GE 148F740 | B-4         | Differential Pressure                             | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Flow Rate   | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Vibration   | Q          | PR-01          |           |          |
|                |            |              |           |             |            |             | Pump Description: CONTAINMENT SPRAY PMP 1-4 (51D) |            |                |           |          |

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**Attachment 14  
Inservice Testing Pump Table**

**System 251 Spent Fuel Pool Cooling (Page 1)**

| Pump EPN   | Test Group | Safety Class | Pump Type | Pump Driver | P&ID       | P&ID Coord. | Test Type             | Test Freq. | Relief Request | Tech Pos. | Comments |
|--|------------|--------------|-----------|-------------|------------|-------------|-----------------------|------------|----------------|-----------|----------|
| <b>P-18-1A</b>   | A          | 3            | C         | M           | GE 237E756 | F-6         | Differential Pressure | Q          | PR-01          |           |          |
|  |            |              |           |             |            |             | Flow Rate             | Q          | PR-01          |           |          |
|  |            |              |           |             |            |             | Vibration             | Q          | PR-01          |           |          |
| Pump Description: SPENT FUEL POOL COOLING PUMP (NN01-A)  |            |              |           |             |            |             |                       |            |                |           |          |
| <b>P-18-1B</b>   | A          | 3            | C         | M           | GE 237E756 | D-6         | Differential Pressure | Q          | PR-01          |           |          |
|  |            |              |           |             |            |             | Flow Rate             | Q          | PR-01          |           |          |
|  |            |              |           |             |            |             | Vibration             | Q          | PR-01          |           |          |
| Pump Description: SPENT FUEL POOL COOLING PUMP (NN01-B)  |            |              |           |             |            |             |                       |            |                |           |          |
| <b>P-18-1C</b>   | A          | 3            | C         | M           | GE 237E756 | C-5         | Differential Pressure | Y2         |                |           | Augmnt   |
|  |            |              |           |             |            |             | Flow Rate             | Y2         |                |           | Augmnt   |
|  |            |              |           |             |            |             | Vibration             | Y2         |                |           | Augmnt   |
| Pump Description: SPENT FUEL POOL PUMP (NN01-C) – Augmented<br>This pump provides heat removal when full fore offload is performed and will be tested only when it is required to be used. |            |              |           |             |            |             |                       |            |                |           |          |
| <b>P-18-1D</b>   | A          | 3            | C         | M           | GE 237E756 | B-5         | Differential Pressure | Y2         |                |           | Augmnt   |
|  |            |              |           |             |            |             | Flow Rate             | Y2         |                |           | Augmnt   |
|  |            |              |           |             |            |             | Vibration             | Y2         |                |           | Augmnt   |
| Pump Description: SPENT FUEL POOL PUMP (NN01-D) - Augmented<br>This pump provides heat removal when full fore offload is performed and will be tested only when it is required to be used. |            |              |           |             |            |             |                       |            |                |           |          |



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**Attachment 14  
Inservice Testing Pump Table**

**System 424 Condensate Transfer (Page 1)**

| Pump EPN | Test Group | Safety Class | Pump Type | Pump Driver | P&ID    | P&ID Coord. | Test Type                                      | Test Freq. | Relief Request | Tech Pos. | Comments |
|----------|------------|--------------|-----------|-------------|---------|-------------|--|------------|----------------|-----------|----------|
| P-11-1   | A          | 3            | C         | M           | BR 2004 | D-7         | Differential Pressure                          | Q          | PR-01          |           |          |
|          |            |              |           |             |         |             | Flow Rate                                      | Q          | PR-01          |           |          |
|          |            |              |           |             |         |             | Vibration                                      | Q          | PR-01          |           |          |
|          |            |              |           |             |         |             | Pump Description: CONDENSATE TRANSFER PUMP 1-1 |            |                |           |          |
| P-11-2   | A          | 3            | C         | M           | BR 2004 | C-8         | Differential Pressure                          | Q          | PR-01          |           |          |
|          |            |              |           |             |         |             | Flow Rate                                      | Q          | PR-01          |           |          |
|          |            |              |           |             |         |             | Vibration                                      | Q          | PR-01          |           |          |
|          |            |              |           |             |         |             | Pump Description: CONDENSATE TRANSFER PUMP 1-2 |            |                |           |          |

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**Attachment 14  
Inservice Testing Pump Table**

**System 531 Service Water (Page 1)**

| Pump EPN      | Test Group | Safety Class | Pump Type | Pump Driver | P&ID    | P&ID Coord. | Test Type   | Test Freq. | Relief Request | Tech Pos. | Comments |
|---------------|------------|--------------|-----------|-------------|---------|-------------|---|------------|----------------|-----------|----------|
| <b>P-3-1A</b> | A          | N/A          | VLS       | M           | BR 2005 | G-8         | Differential Pressure                                       | Q          |                |           | Augmnt   |
|               |            |              |           |             |         |             | Flow Rate   | Q          |                |           | Augmnt   |
|               |            |              |           |             |         |             | Vibration   | Q          |                |           | Augmnt   |
|               |            |              |           |             |         |             | Pump Description: SERVICE WATER SYSTEM PUMP 1-1 - Augmented |            |                |           |          |
| <b>P-3-1B</b> | A          | N/A          | VLS       | M           | BR 2005 | G-8         | Differential Pressure                                       | Q          |                |           | Augmnt   |
|               |            |              |           |             |         |             | Flow Rate   | Q          |                |           | Augmnt   |
|               |            |              |           |             |         |             | Vibration   | Q          |                |           | Augmnt   |
|               |            |              |           |             |         |             | Pump Description: SERVICE WATER SYSTEM PUMP 1-2 - Augmented |            |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
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**Attachment 14  
Inservice Testing Pump Table**

**System 532 Emergency Service Water (Page 1)**

| Pump EPN      | Test Group | Safety Class | Pump Type | Pump Driver | P&ID    | P&ID Coord. | Test Type   | Test Freq. | Relief Request | Tech Pos. | Comments |
|---------------|------------|--------------|-----------|-------------|---------|-------------|---|------------|----------------|-----------|----------|
| <b>P-3-3A</b> | AB         | 3            | VLS       | M           | BR 2005 | H-7         | Differential Pressure                                   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Flow Rate   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Vibration   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Pump Description: EMERGENCY SERVICE WATER PUMP 1-1(52A) |            |                |           |          |
| <b>P-3-3B</b> | AB         | 3            | VLS       | M           | BR 2005 | H-8         | Differential Pressure                                   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Flow Rate   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Vibration   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Pump Description: EMERGENCY SERVICE WATER PUMP 1-2(52B) |            |                |           |          |
| <b>P-3-3C</b> | AB         | 3            | VLS       | M           | BR 2005 | B-8         | Differential Pressure                                   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Flow Rate   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Vibration   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Pump Description: EMERGENCY SERVICE WATER PUMP 1-3(52C) |            |                |           |          |
| <b>P-3-3D</b> | AB         | 3            | VLS       | M           | BR 2005 | B-7         | Differential Pressure                                   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Flow Rate   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Vibration   | Q          | PR-01          |           |          |
|               |            |              |           |             |         |             | Pump Description: EMERGENCY SERVICE WATER PUMP 1-4(52D) |            |                |           |          |

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**Attachment 14  
Inservice Testing Pump Table**

**System 541 Reactor Building Closed Cooling Water (Page 1)**

| Pump EPN     | Test Group | Safety Class | Pump Type | Pump Driver | P&ID    | P&ID Coord. | Test Type  | Test Freq. | Relief Request | Tech Pos. | Comments |
|--------------|------------|--------------|-----------|-------------|---------|-------------|--|------------|----------------|-----------|----------|
| <b>P-5-1</b> | A          | 3            | C         | M           | BR 2006 | C-5         | Differential Pressure  | Q          | PR-01          |           |          |
|              |            |              |           |             |         |             | Flow Rate  | Q          | PR-01          |           |          |
|              |            |              |           |             |         |             | Vibration  | Q          | PR-01          |           |          |
|              |            |              |           |             |         |             | Pump Description: REACTOR BUILDING CLOSED COOLING WATER PUMP 1-1 |            |                |           |          |
| <b>P-5-2</b> | A          | 3            | C         | M           | BR 2006 | B-5         | Differential Pressure  | Q          | PR-01          |           |          |
|              |            |              |           |             |         |             | Flow Rate  | Q          | PR-01          |           |          |
|              |            |              |           |             |         |             | Vibration  | Q          | PR-01          |           |          |
|              |            |              |           |             |         |             | Pump Description: REACTOR BUILDING CLOSED COOLING WATER PUMP 1-2 |            |                |           |          |

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**ATTACHMENT 15**  
**INSERVICE TESTING VALVE TABLE**

**OYSTER CREEK NUCLEAR GENERATING STATION  
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**Attachment 15  
Inservice Testing Valve Table**

**System 211 Isolation Condenser (Page 1)**

| Valve   | Safety Class | Category | Size  | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type              | Test Freq.         | Relief Request | Deferred Just. | Tech Pos. | Comments   |
|---|--------------|----------|-------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|------------------------|--------------------|----------------|----------------|-----------|------------|
| V-14-1  | 2            | A        | 0.75  | GL         | AO        | A                | O               | C             | O/C             | GE 148F262 | E8          | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Y2<br>Q |                |                |           |            |
| Valve Name: NE01-B VENT TO MAIN STEAM HEADER A            |              |          |       |            |           |                  |                 |               |                 |            |             |                        |                    |                |                |           |            |
| V-14-162  | 1            | C        | 0.375 | CK         | SA        | A                | C               | -             | O/C             | GE 148F262 | C4          | CCD<br>COD             | CM<br>CM           |                |                |           | CMP<br>CMP |
| Valve Name: V-14-037 BYPASS CHECK                         |              |          |       |            |           |                  |                 |               |                 |            |             |                        |                    |                |                |           |            |
| V-14-165  | 1            | C        | 0.375 | CK         | SA        | A                | C               | -             | O/C             | GE 148F262 | B4          | CCD<br>COD             | CM<br>CM           |                |                |           | CMP<br>CMP |
| Valve Name: V-14-036 BYPASS CHECK                         |              |          |       |            |           |                  |                 |               |                 |            |             |                        |                    |                |                |           |            |
| V-14-19   | 2            | A        | 0.75  | GL         | AO        | A                | O               | C             | O/C             | GE 148F262 | F8          | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Y2<br>Q |                |                |           |            |
| Valve Name: NE01-B VENT TO MAIN STEAM HEADER A            |              |          |       |            |           |                  |                 |               |                 |            |             |                        |                    |                |                |           |            |
| V-14-20   | 2            | A        | 0.75  | GL         | AO        | A                | O               | C             | O/C             | GE 148F262 | F5          | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Y2<br>Q |                |                |           |            |
| Valve Name: NE01-A VENT TO MAIN STEAM HEADER B            |              |          |       |            |           |                  |                 |               |                 |            |             |                        |                    |                |                |           |            |
| V-14-30   | 1            | B        | 10    | GA         | MO        | A                | O               | AI            | O/C             | GE 148F262 | G5          | PI<br>STC              | Y2<br>Q            |                |                |           |            |
| Valve Name: RV STEAM SUPPLY TO EMERGENCY CONDENSER NE01-A |              |          |       |            |           |                  |                 |               |                 |            |             |                        |                    |                |                |           |            |
| V-14-31   | 1            | B        | 10    | GA         | MO        | A                | O               | AI            | O/C             | GE 148F262 | G5          | PI<br>STC              | Y2<br>Q            |                |                |           |            |
| Valve Name: RV STEAM SUPPLY TO EMERGENCY CONDENSER NE01-A |              |          |       |            |           |                  |                 |               |                 |            |             |                        |                    |                |                |           |            |
| V-14-32   | 1            | B        | 10    | GA         | MO        | A                | O               | AI            | O/C             | GE 148F262 | G4          | PI<br>STC              | Y2<br>Q            |                |                |           |            |
| Valve Name: RV STEAM SUPPLY TO EMERGENCY CONDENSER NE01-B |              |          |       |            |           |                  |                 |               |                 |            |             |                        |                    |                |                |           |            |
| V-14-33   | 1            | B        | 10    | GA         | MO        | A                | O               | AI            | O/C             | GE 148F262 | G4          | PI<br>STC              | Y2<br>Q            |                |                |           |            |
| Valve Name: RV STEAM SUPPLY TO EMERGENCY CONDENSER NE01-B |              |          |       |            |           |                  |                 |               |                 |            |             |                        |                    |                |                |           |            |

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**Attachment 15  
Inservice Testing Valve Table**

**System 211**

**Isolation Condenser (Page 2)**

| Valve   | Safety Class | Category | Size | Valve Type  | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---------|--------------|----------|------|---|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-14-34 | 1            | B        | 10   | GA  | MO        | A                | C               | AI            | O/C             | GE 148F262 | E4          | PI        | Y2         |                |                |           |          |
|         |              |          |      |   |           |                  |                 |               |                 |            |             | STC       | Q          |                |                |           |          |
|         |              |          |      |   |           |                  |                 |               |                 |            |             | STO       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: NE01-A CONDENSATE RETURN TO RECIRC LOOP A |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-14-35 | 1            | B        | 10   | GA  | MO        | A                | C               | AI            | O/C             | GE 148F262 | E4          | PI        | Y2         |                |                |           |          |
|         |              |          |      |   |           |                  |                 |               |                 |            |             | STC       | Q          |                |                |           |          |
|         |              |          |      |   |           |                  |                 |               |                 |            |             | STO       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: NE01-B CONDENSATE RETURN TO RECIRC LOOP E |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-14-36 | 1            | B        | 10   | GA  | MO        | A                | O               | AI            | O/C             | GE 148F262 | B4          | PI        | Y2         |                |                |           |          |
|         |              |          |      |   |           |                  |                 |               |                 |            |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: NE01-A CONDENSATE RETURN TO RECIRC LOOP A |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-14-37 | 1            | B        | 10   | GA  | MO        | A                | O               | AI            | O/C             | GE 148F262 | C4          | PI        | Y2         |                |                |           |          |
|         |              |          |      |   |           |                  |                 |               |                 |            |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: NE01-B CONDENSATE RETURN TO RECIRC LOOP E |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-14-5  | 2            | A        | 0.75 | GL  | AO        | A                | O               | C             | O/C             | GE 148F262 | F5          | FC        | Q          |                |                |           |          |
|         |              |          |      |   |           |                  |                 |               |                 |            |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |   |           |                  |                 |               |                 |            |             | PI        | Y2         |                |                |           |          |
|         |              |          |      |   |           |                  |                 |               |                 |            |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: NE01-A VENT TO MAIN STEAM HEADER B        |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 212 Core Spray (Page 1)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type               | Test Freq.           | Relief Request | Deferred Just. | Tech Pos.      | Comments         |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-------------------------|----------------------|----------------|----------------|----------------|------------------|
| V-20-1  | N/A          | B        | 12   | GA         | M         | A                | LC              | AI            | O               | GE 885D781 | B3          | EC<br>EO                | Y2<br>Y2             |                |                |                | Augmnt<br>Augmnt |
| Valve Name: CORE SPRAY SYSTEM SUPPLY FROM COND.STORAGE TANK |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |                |                  |
| V-20-116  | 2            | C        | 1    | CK         | SA        | A                | O               | -             | C               | GE 885D781 | G3          | BDO<br>CC               | OP<br>Q              |                |                |                |                  |
| Valve Name: CS FILL PUMP NZ04B TO NZ01B DISCHARGE CHECK     |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |                |                  |
| V-20-119  | 2            | C        | 1    | CK         | SA        | A                | O               | -             | C               | GE 885D781 | D4          | BDO<br>CC               | OP<br>Q              |                |                |                |                  |
| Valve Name: CS FILL PUMP NZ04A TO NZ01A DISCHARGE CHECK     |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |                |                  |
| V-20-12   | 2            | B        | 8    | GA         | MO        | P                | O               | AI            | O               | GE 885D781 | E7          | PI                      | Y2                   |                |                |                |                  |
| Valve Name: CS LOOP A INJECTION ISOLATION                   |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |                |                  |
| V-20-15   | 1            | A        | 8    | GA         | MO        | A                | C               | AI            | O/C             | GE 885D781 | E7          | LTH<br>PI<br>STC<br>STO | Y2<br>Y2<br>Q<br>Q   |                |                |                |                  |
| Valve Name: CS LOOP A INJECTION VALVE                       |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |                |                  |
| V-20-150  | 1            | AC       | 8    | CK         | AO        | A                | C               | -             | O/C             | GE 885D781 | E7          | CC<br>CO<br>LTH<br>PI   | CS<br>CS<br>CS<br>Y2 |                |                | CS-03<br>CS-03 |                  |
| Valve Name: CS LOOP A INJECTION TESTABLE CHECK VALVE        |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |                |                  |
| V-20-151  | 1            | AC       | 8    | CK         | AO        | A                | C               | -             | O/C             | GE 885D781 | G7          | CC<br>CO<br>LTH<br>PI   | CS<br>CS<br>CS<br>Y2 |                |                | CS-03<br>CS-03 |                  |
| Valve Name: CS LOOP B INJECTION TESTABLE CHECK VALVE        |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |                |                  |
| V-20-152  | 1            | AC       | 8    | CK         | AO        | A                | C               | -             | O/C             | GE 885D781 | E8          | CC<br>CO<br>LTH<br>PI   | CS<br>CS<br>CS<br>Y2 |                |                | CS-03<br>CS-03 |                  |
| Valve Name: CS LOOP A INJECTION TESTABLE CHECK VALVE        |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |                |                  |



**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 212**

**Core Spray (Page 2)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type               | Test Freq.           | Relief Request | Deferred Just. | Tech Pos. | Comments         |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-------------------------|----------------------|----------------|----------------|-----------|------------------|
| V-20-153   | 1            | AC       | 8    | CK         | AO        | A                | C               | -             | O/C             | GE 885D781 | G8          | CC<br>CO<br>LTH<br>PI   | CS<br>CS<br>CS<br>Y2 |                | CS-03<br>CS-03 |           |                  |
| Valve Name: CS LOOP B INJECTION TESTABLE CHECK VALVE           |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |
| V-20-16  | 2            | C        | 8    | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | D4          | CC<br>COD<br>COF        | Q<br>SA<br>Q         |                | RJ-16          |           | D&I              |
| Valve Name: CS PUMP NZ01C DISCHARGE CHECK                      |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |
| V-20-17  | 1            | B        | 8    | GA         | M         | P                | LO              | AI            | O               | GE 885D781 | F7          | PI                      | Y2                   |                |                |           |                  |
| Valve Name: CS LOOP A INJECTION ISOLATION                      |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |
| V-20-18  | 2            | B        | 8    | GA         | MO        | P                | O               | AI            | O               | GE 885D781 | G7          | PI                      | Y2                   |                |                |           |                  |
| Valve Name: CS LOOP B INJECTION ISOLATION                      |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |
| V-20-2   | 2            | B        | 12   | GA         | M         | A                | LC              | AI            | O/C             | GE 885D781 | E3          | EC<br>EO                | Y2<br>Y2             |                |                |           | Augmnt<br>Augmnt |
| Valve Name: CONDENSATE TRANSFER VALVE TO NZ01-B SUCTION (L.C.) |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |
| V-20-21  | 1            | A        | 8    | GA         | MO        | A                | C               | AI            | O/C             | GE 885D781 | G7          | LTH<br>PI<br>STC<br>STO | Y2<br>Y2<br>Q<br>Q   |                |                |           |                  |
| Valve Name: CS LOOP B INJECTION VALVE                          |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |
| V-20-22  | 2            | C        | 8    | CK         | CK        | A                | C               | -             | O/C             | GE 885D781 | F3          | CC<br>COD<br>COF        | Q<br>SA<br>Q         |                | RJ-16          |           | D&I              |
| Valve Name: CS PUMP NZ01-D DISCHARGE CHECK VALVE               |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |
| V-20-23  | 1            | B        | 8    | GA         | M         | P                | LO              | AI            | O               | GE 885D781 | F7          | PI                      | Y2                   |                |                |           |                  |
| Valve Name: CS LOOP B INJECTION ISOLATION                      |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |
| V-20-26  | 2            | B        | 6    | GL         | MO        | A                | C               | AI            | C               | GE 885D781 | F6          | PI<br>STC               | Y2<br>Q              |                |                |           |                  |
| Valve Name: CS SYSTEM 2 TEST RETURN ISOLATION                  |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |
| V-20-27  | 2            | B        | 6    | GL         | MO        | A                | C               | AI            | C               | GE 885D781 | D7          | PI<br>STC               | Y2<br>Q              |                |                |           |                  |
| Valve Name: CS SYSTEM 1 TEST RETURN ISOLATION                  |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                      |                |                |           |                  |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 212**

**Core Spray (Page 3)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type               | Test Freq.         | Relief Request | Deferred Just. | Tech Pos. | Comments         |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-------------------------|--------------------|----------------|----------------|-----------|------------------|
| V-20-3   | 2            | B        | 12   | GA         | MO        | P                | O               | AI            | O               | GE 885D781 | B4          | PI                      | Y2                 |                |                |           |                  |
| Valve Name: CS PUMP NZ01A SUCTION FROM TORUS                   |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-30  | 2            | C        | 6    | CK         | SA        | A                | C               | -             | O               | GE 885D781 | C7          | CCD<br>CO               | SA<br>Q            |                | RJ-20          |           | D&I              |
| Valve Name: CS LOOP A TEST RETURN CHECK                        |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-31  | 2            | C        | 6    | CK         | SA        | A                | C               | -             | O               | GE 885D781 | C6          | CCD<br>CO               | SA<br>Q            |                | RJ-20          |           | D&I              |
| Valve Name: CS LOOP B TEST RETURN CHECK                        |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-32  | 2            | B        | 12   | GA         | MO        | P                | O               | AI            | O               | GE 885D781 | B4          | PI                      | Y2                 |                |                |           |                  |
| Valve Name: CS PUMP NZ01C SUCTION FROM TORUS                   |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-33  | 2            | B        | 12   | GA         | MO        | P                | O               | AI            | O               | GE 885D781 | D3          | PI                      | Y2                 |                |                |           |                  |
| Valve Name: CS PUMP NZ01D SUCTION FROM TORUS                   |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-34  | 2            | B        | 12   | GA         | M         | A                | LC              | AI            | O/C             | GE 885D781 | B4          | EC<br>EO                | Y2<br>Y2           |                |                |           | Augmnt<br>Augmnt |
| Valve Name: CONDENSATE TRANSFER SUPPLY TO NZ01-C MAIN PUMP ISO |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-35  | 2            | B        | 12   | GA         | M         | A                | LC              | AI            | O/C             | GE 885D781 | E3          | EC<br>EO                | Y2<br>Y2           |                |                |           | Augmnt<br>Augmnt |
| Valve Name: CONDENSATE TRANSFER TO PUMP NZ01-D SUCTION (L.C.)  |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-4   | 2            | B        | 12   | GA         | MO        | P                | O               | AI            | O               | GE 885D781 | D2          | PI                      | Y2                 |                |                |           |                  |
| Valve Name: CS PUMP NZ01B SUCTION FROM TORUS                   |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-40  | 1            | A        | 8    | GA         | MO        | A                | C               | AI            | O/C             | GE 885D781 | D7          | LTH<br>PI<br>STC<br>STO | Y2<br>Y2<br>Q<br>Q |                |                |           |                  |
| Valve Name: CS LOOP A INJECTION VALVE                          |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-41  | 1            | A        | 8    | GA         | MO        | A                | C               | AI            | O/C             | GE 885D781 | G7          | LTH<br>PI<br>STC<br>STO | Y2<br>Y2<br>Q<br>Q |                |                |           |                  |
| Valve Name: CS LOOP B INJECTION VALVE                          |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |
| V-20-5   | 2            | B        | 12   | GA         | M         | A                | LC              | AI            | O/C             | GE 885D781 | B4          | EC<br>EO                | Y2<br>Y2           |                |                |           | Augmnt<br>Augmnt |
| Valve Name: CST SUPPLY TO MAIN PUMP NZ01-A ISOLATION VALVE     |              |          |      |            |           |                  |                 |               |                 |            |             |                         |                    |                |                |           |                  |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 212 Core Spray (Page 4)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |       |     |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-----------|------------|----------------|----------------|-----------|----------|-------|-----|
| V-20-50   | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | D5          | CC        | Q          |                |                |           |          |       |     |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COD       | SA         |                |                |           |          | RJ-21 | D&I |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COF       | Q          |                |                |           |          |       |     |
| Valve Name: CS BOOSTER PUMPS NZ03A/C BYPASS CHECK     |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| V-20-51   | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | G5          | CC        | Q          |                |                |           |          |       |     |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COD       | SA         |                |                |           |          | RJ-21 | D&I |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COF       | Q          |                |                |           |          |       |     |
| Valve Name: CS BOOSTER PUMPS NZ03B/D BYPASS CHECK     |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| V-20-52   | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | C5          | CC        | Q          |                |                |           |          |       |     |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COD       | SA         |                |                |           |          | RJ-17 | D&I |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COF       | Q          |                |                |           |          |       |     |
| Valve Name: CS BOOSTER PUMP NZ03A DISCHARGE CHECK     |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| V-20-53   | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | D5          | CC        | Q          |                |                |           |          |       |     |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COD       | SA         |                |                |           |          | RJ-17 | D&I |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COF       | Q          |                |                |           |          |       |     |
| Valve Name: CS BOOSTER PUMP NZ03C DISCHARGE CHECK     |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| V-20-54   | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | G5          | CC        | Q          |                |                |           |          |       |     |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COD       | SA         |                |                |           |          | RJ-17 | D&I |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COF       | Q          |                |                |           |          |       |     |
| Valve Name: CS BOOSTER PUMP NZ03B DISCHARGE CHECK     |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| V-20-55   | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | F5          | CC        | Q          |                |                |           |          |       |     |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COD       | SA         |                |                |           |          | RJ-17 | D&I |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COF       | Q          |                |                |           |          |       |     |
| Valve Name: CS BOOSTER PUMP NZ03D DISCHARGE CHECK     |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| V-20-60   | 2            | C        | 6    | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | E4          | CC        | Q          |                |                |           |          |       |     |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COD       | SA         |                |                |           |          | RJ-18 | D&I |
|   |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| Valve Name: FIRE PROTECTION SUPPLY TO CS LOOP A CHECK |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| V-20-61   | 2            | C        | 6    | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | F5          | CC        | Q          |                |                |           |          |       |     |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COD       | SA         |                |                |           |          | RJ-18 | D&I |
|   |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| Valve Name: FIRE PROTECTION SUPPLY TO CS LOOP B CHECK |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |
| V-20-8  | 2            | C        | 8    | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | C4          | CC        | Q          |                |                |           |          |       |     |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COD       | SA         |                |                |           |          | RJ-16 | D&I |
|   |              |          |      |            |           |                  |                 |               |                 |            |             | COF       | Q          |                |                |           |          |       |     |
| Valve Name: CS PUMP NZ01A DISCHARGE CHECK             |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |       |     |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 212 Core Spray (Page 5)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type        | Test Freq.   | Relief Request | Deferred Just. | Tech Pos. | Comments         |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|------------------|--------------|----------------|----------------|-----------|------------------|
| V-20-82  | 3            | B        | 6    | GA         | M         | A                | C               | AI            | O               | GE 885D781 | F5          | EC<br>EO         | Y2<br>Y2     |                |                |           |                  |
| Valve Name: FIRE PROTECTION SUPPLY TO CS LOOP B ISOLATION    |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |                  |
| V-20-83  | 3            | B        | 6    | GA         | M         | A                | C               | AI            | O               | GE 885D781 | E4          | EC<br>EO         | Y2<br>Y2     |                |                |           |                  |
| Valve Name: FIRE PROTECTION SUPPLY TO CS LOOP A ISOLATION    |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |                  |
| V-20-88  | 2            | C        | 6    | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | E4          | CC<br>COD        | Q<br>SA      |                | RJ-18          |           | D&I              |
| Valve Name: FIRE PROTECTION SUPPLY TO CS LOOP A CHECK        |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |                  |
| V-20-89  | 2            | C        | 6    | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | F5          | CC<br>COD        | Q<br>SA      |                | RJ-18          |           | D&I              |
| Valve Name: FIRE PROTECTION SUPPLY TO CS LOOP B CHECK        |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |                  |
| V-20-9   | 2            | C        | 8    | CK         | SA        | A                | C               | -             | O/C             | GE 885D781 | F2          | CC<br>COD<br>COF | Q<br>SA<br>Q |                | RJ-16          |           | D&I              |
| Valve Name: CS PUMP NZ01B DISCHARGE CHECK                    |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |                  |
| V-20-90  | 2            | B        | 2    | GA         | M         | A                | O               | -             | O/C             | GE 885D781 | F5          | EC<br>EO         | Y2<br>Y2     |                |                |           | Augmnt<br>Augmnt |
| Valve Name: FIRE WATER SYSTEM FEED TO DRAIN TO RBEDT(SYS II) |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |                  |
| V-20-91  | 2            | B        | 2    | GA         | M         | A                | O               | -             | O/C             | GE 885D781 | E4          | EC<br>EO         | Y2<br>Y2     |                |                |           | Augmnt<br>Augmnt |
| Valve Name: FIRE WATER SUPPLY TELL-TALE DRAIN TO RBEDT       |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |                  |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 213 Standby Liquid Control (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type       | Test Freq.     | Relief Request | Deferred Just. | Tech Pos. | Comments         |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-----------------|----------------|----------------|----------------|-----------|------------------|
| V-19-16  | 1            | A/C      | 1.5  | CK         | SA        | A                | C               | -             | O/C             | GE 148F723 | E-7         | CC<br>CO<br>LTJ | RR<br>RR<br>AJ |                |                |           | RJ-08<br>RJ-08   |
| Valve Name: POISON PUMPS DISCHARGE CHECK VALVE OUTSIDE DRYWELL |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |
| V-19-19  | 1            | B        | 1.5  | GA         | M         | P                | LO              | AI            | O               | GE 148F723 | D-8         | PI              | Y2             |                |                |           |                  |
| Valve Name: LIQUID POISON INJECTION HEADER ISOLATION           |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |
| V-19-20  | 1            | A/C      | 1.5  | CK         | SA        | A                | C               | -             | O/C             | GE 148F723 | E-8         | CC<br>CO<br>LTJ | RR<br>RR<br>AJ |                |                |           | RJ-08<br>RJ-08   |
| Valve Name: LIQUID POISON INLET CHECK VALVE TO REACTOR         |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |
| V-19-37  | 2            | C        | 1.5  | CK         | SA        | A                | C               | -             | O/C             | GE 148F723 | E-6         | CC<br>CO        | Q<br>Q         |                |                |           |                  |
| Valve Name: P-19-001A DISCHARGE CHECK                          |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |
| V-19-38  | 2            | C        | 1.5  | CK         | SA        | A                | C               | -             | O/C             | GE 148F723 | D-6         | CC<br>CO        | Q<br>Q         |                |                |           |                  |
| Valve Name: P-19-001B DISCHARGE CHECK                          |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |
| V-19-4   | 2            | B        | 2.5  | GA         | M         | P/A              | LO              | -             | O/C             | GE 148E723 | F3          | EC<br>EO        | Y2<br>Y2       |                |                |           | Augmnt<br>Augmnt |
| Valve Name: SUCTION VALVE TO POISON PUMPS HEADER               |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |
| V-19-42  | 2            | C        |      | RV         | SA        | A                | C               | -             | O/C             | GE 148F723 | F-5         | RT              | Y10            |                |                |           |                  |
| Valve Name: P-19-001A DISCHARGE RELIEF                         |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |
| V-19-43  | 2            | C        |      | RV         | SA        | A                | C               | -             | O/C             | GE 148F723 | D-5         | RT              | Y10            |                |                |           |                  |
| Valve Name: P-19-001B DISCHARGE RELIEF                         |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |
| V-19-44  | 2            | BD       | 1.5  | SHR        | EXP       | A                | C               | -             | O               | GE 148F723 | E-7         | DT<br>SO        | RR<br>RR       |                |                |           | RJ-10<br>RJ-10   |
| Valve Name: LIQUID POISON HEADER A SQUIBB VALVE                |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |
| V-19-45  | 2            | BD       | 1.5  | SHR        | EXP       | A                | C               | -             | O               | GE 148F723 | D-7         | DT<br>SO        | RR<br>RR       |                |                |           | RJ-10<br>RJ-10   |
| Valve Name: LIQUID POISON HEADER B SQUIBB VALVE                |              |          |      |            |           |                  |                 |               |                 |            |             |                 |                |                |                |           |                  |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 214 Shutdown Cooling (Page 1)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-17-1  | 1            | B        | 10   | GA         | MO        | A                | O/C             | AI            | C               | GE 148F711 | G-3         | PI        | Y2         |                |                |           | CS-02    |
| Valve Name: P-17-1 SUCTION ISOLATION                      |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-17-19   | 1            | B        | 14   | GA         | MO        | A                | O/C             | AI            | C               | GE 148F711 | B-3         | PI        | Y2         |                |                |           | CS-02    |
| Valve Name: SHUTDOWN COOLING ISOLATION FROM RECIRC LOOP E |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-17-2  | 1            | B        | 10   | GA         | MO        | A                | O/C             | AI            | C               | GE 148F711 | E-3         | PI        | Y2         |                |                |           | CS-02    |
| Valve Name: P-17-2 SUCTION ISOLATION                      |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-17-227  | 1            | C        |      | RV         | SA        | A                | C               | -             | O/C             | GE 148F711 | D-2         | RT        | Y2         |                |                |           |          |
| Valve Name: SDC THERMAL RELIEF                            |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-17-3  | 1            | B        | 10   | GA         | MO        | A                | O/C             | AI            | C               | GE 148F711 | C-3         | PI        | Y2         |                |                |           | CS-02    |
| Valve Name: P-17-3 SUCTION ISOLATION                      |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-17-54   | 1            | B        | 14   | GA         | MO        | A                | O/C             | AI            | C               | GE 148F711 | D-8         | PI        | Y2         |                |                |           | CS-02    |
| Valve Name: RECIRC LOOP E RETURN ISOLATION                |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-17-55   | 1            | B        | 8    | GL         | MO        | A                | O/C             | AI            | C               | GE 148F711 | G-7         | PI        | Y2         |                |                |           | CS-02    |
| Valve Name: SDC LOOP A RETURN ISOLATION                   |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-17-56   | 1            | B        | 8    | GL         | MO        | A                | O/C             | AI            | C               | GE 148F711 | E-7         | PI        | Y2         |                |                |           | CS-02    |
| Valve Name: SDC LOOP B RETURN ISOLATION                   |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-17-57   | 1            | B        | 8    | GL         | MO        | A                | O/C             | AI            | C               | GE 148F711 | D-7         | PI        | Y2         |                |                |           | CS-02    |
| Valve Name: SDC LOOP C RETURN ISOLATION                   |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 215 Reactor Water Cleanup (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type        | Test Freq.     | Relief Request | Deferred Just. | Tech Pos. | Comments   |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|------------------|----------------|----------------|----------------|-----------|------------|
| V-16-1   | 1            | A        | 6    | GA         | MO        | A                | O               | AI            | C               | GE 148F444 | G-10        | LTJ<br>PI<br>STC | AJ<br>Y2<br>RR |                |                |           | RJ-14      |
| Valve Name: CLEANUP SUPPLY INNER CONTAINMENT ISOLATION   |              |          |      |            |           |                  |                 |               |                 |            |             |                  |                |                |                |           |            |
| V-16-14  | 1            | A        | 6    | GA         | MO        | A                | O               | AI            | C               | GE 148F444 | G-9         | LTJ<br>PI<br>STC | AJ<br>Y2<br>RR |                |                |           | RJ-14      |
| Valve Name: CLEANUP SUPPLY OUTER CONTAINMENT ISOLATION   |              |          |      |            |           |                  |                 |               |                 |            |             |                  |                |                |                |           |            |
| V-16-2   | 1            | A        | 6    | GA         | MO        | A                | C               | AI            | C               | GE 148F444 | G-9         | LTJ<br>PI<br>STC | AJ<br>Y2<br>RR |                |                |           | RJ-14      |
| Valve Name: P-16-2 SUCTION ISOLATION                     |              |          |      |            |           |                  |                 |               |                 |            |             |                  |                |                |                |           |            |
| V-16-61  | 1            | A        | 6    | GA         | MO        | A                | O               | AI            | C               | GE 148F444 | F-6         | LTJ<br>PI<br>STC | AJ<br>Y2<br>RR |                |                |           | RJ-14      |
| Valve Name: CLEANUP RETURN OUTER CONTAINMENT ISOLATION   |              |          |      |            |           |                  |                 |               |                 |            |             |                  |                |                |                |           |            |
| V-16-62  | 1            | A/C      | 6    | CK         | SA        | A                | O               | -             | C               | GE 148F444 | F-6         | BDO<br>CC<br>LTJ | OP<br>RR<br>AJ |                |                |           | RJ-07      |
| Valve Name: CLEANUP RETURN INNER CONTAINMENT ISOLATION   |              |          |      |            |           |                  |                 |               |                 |            |             |                  |                |                |                |           |            |
| V-16-84  | 2            | C        | 20   | CK         | SA        | A                | C               | AI            | O/C             | GE 148F444 | H2          | CCD<br>COD       | CM<br>CM       |                |                |           | CMP<br>CMP |
| Valve Name: RWCU RELIEF VALVE V-16-76 VENT LINE TO TORUS |              |          |      |            |           |                  |                 |               |                 |            |             |                  |                |                |                |           |            |

OYSTER CREEK NUCLEAR GENERATING STATION  
 Inservice Testing Program Plan

Attachment 15  
 Inservice Testing Valve Table

**System 216 Reactor Head Cooling (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |  |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-----------|------------|----------------|----------------|-----------|----------|--|
| V-31-2   | 1            | A        | 2    | GL         | AO        | P                | C               | C             | C               | GE 237E487 | F-8         | LTJ       | AJ         |                |                |           |          |  |
| Valve Name: REACTOR HEAD COOLING CONTAINMENT ISOLATION       |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |  |
| V-31-5   | 1            | AC       | 2    | CK         | SA        | P                | C               | -             | C               | GE 237E487 | H-7         | LTJ       | AJ         |                |                |           |          |  |
| Valve Name: REACTOR HEAD COOLING CONTAINMENT ISOLATION CHECK |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |  |



**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 225 Control Rod Drive (Page 1)**

| Valve                       | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type       | Test Freq.    | Relief Request | Deferred Just. | Tech Pos. | Comments |
|-----------------------------|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-----------------|---------------|----------------|----------------|-----------|----------|
| <b>V-15-119</b>             | 2            | B        | 1    | GA         | AO        | A                | O               | C             | C               | GE 197E871 | F-9         | FC<br>PI<br>STC | RR<br>Y2<br>Q |                |                |           | RJ-11    |
| Valve Name: NORTH SDV VENT  |              |          |      |            |           |                  |                 |               |                 |            |             |                 |               |                |                |           |          |
| <b>V-15-120</b>             | 2            | B        | 1    | GA         | AO        | A                | O               | C             | C               | GE 197E871 | F-8         | FC<br>PI<br>STC | RR<br>Y2<br>Q |                |                |           | RJ-11    |
| Valve Name: SOUTH SDV VENT  |              |          |      |            |           |                  |                 |               |                 |            |             |                 |               |                |                |           |          |
| <b>V-15-121</b>             | 2            | B        | 2    | GA         | AO        | A                | O               | C             | C               | GE 197E871 | C-7         | FC<br>PI<br>STC | RR<br>Y2<br>Q |                |                |           | RJ-11    |
| Valve Name: SOUTH SDV DRAIN |              |          |      |            |           |                  |                 |               |                 |            |             |                 |               |                |                |           |          |
| <b>V-15-133</b>             | 2            | B        | 2    | GA         | AO        | A                | O               | C             | C               | GE 197E871 | C-9         | FC<br>PI<br>STC | RR<br>Y2<br>Q |                |                |           | RJ-11    |
| Valve Name: NORTH SDV DRAIN |              |          |      |            |           |                  |                 |               |                 |            |             |                 |               |                |                |           |          |
| <b>V-15-134</b>             | 2            | B        | 2    | GA         | AO        | A                | O               | C             | C               | GE 197E871 | C-7         | FC<br>PI<br>STC | RR<br>Y2<br>Q |                |                |           | RJ-11    |
| Valve Name: SOUTH SDV DRAIN |              |          |      |            |           |                  |                 |               |                 |            |             |                 |               |                |                |           |          |
| <b>V-15-135</b>             | 2            | B        | 2    | GA         | AO        | A                | O               | C             | C               | GE 197E871 | C-9         | FC<br>PI<br>STC | RR<br>Y2<br>Q |                |                |           | RJ-11    |
| Valve Name: NORTH SDV DRAIN |              |          |      |            |           |                  |                 |               |                 |            |             |                 |               |                |                |           |          |
| <b>V-15-136</b>             | 2            | B        | 1    | GA         | AO        | A                | O               | C             | C               | GE 197E871 | F-9         | FC<br>PI<br>STC | RR<br>Y2<br>Q |                |                |           | RJ-11    |
| Valve Name: NORTH SDV VENT  |              |          |      |            |           |                  |                 |               |                 |            |             |                 |               |                |                |           |          |
| <b>V-15-137</b>             | 2            | B        | 1    | GA         | AO        | A                | O               | C             | C               | GE 197E871 | F-8         | FC<br>PI<br>STC | RR<br>Y2<br>Q |                |                |           | RJ-11    |
| Valve Name: SOUTH SDV VENT  |              |          |      |            |           |                  |                 |               |                 |            |             |                 |               |                |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 225 Control Rod Drive (Page 2)**

| Valve     | Safety Class | Category | Size | Valve Type  | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments    |
|-----------|--------------|----------|------|---|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-----------|------------|----------------|----------------|-----------|-------------|
| V-15-237  | N/A          | B        | 2    | GA  | M         | A                | C               | AI            | O               | GE 237E487 | C7          | EC        | Y2         |                |                |           | Augmnt      |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | EO        | Y2         |                |                |           | Augmnt      |
|           |              |          |      | Valve Name: CRD BYPASS LINE ISOLATION VALVE                 |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |
| V-15-27   | 1            | AC       | 3    | CK  | SA        | A                | O               | -             | C               | GE 237E487 | D-1         | BDO       | OP         |                |                |           |             |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | CC        | RR         |                |                |           | RJ-06       |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | LTJ       | AJ         |                |                |           |             |
|           |              |          |      | Valve Name: CRD PUMPS TO RPV CONTAINMENT ISOLATION          |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |
| V-15-28   | 1            | AC       | 3    | CK  | SA        | A                | O               | -             | C               | GE 237E487 | D-1         | BDO       | OP         |                |                |           |             |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | CC        | RR         |                |                |           | RJ-06       |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | LTJ       | AJ         |                |                |           |             |
|           |              |          |      | Valve Name: CRD PUMPS TO RPV CONTAINMENT ISOLATION          |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |
| V-15-30   | N/A          | B        | 2    | GL  | M         | A                | C               | AI            | O               | GE 237E487 | C8          | EC        | Y2         |                |                |           | Augmnt      |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | EO        | Y2         |                |                |           | Augmnt      |
|           |              |          |      | Valve Name: CRD PUMP NC08-A & B TEST BYPASS VALVE (APPX R)  |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |
| V-15-52   | N/A          | B        | 2    | GA  | M         | A                | O               | AI            | O               | GE 237E487 | F6          | EC        | Y2         |                |                |           | Augmnt      |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | EO        | Y2         |                |                |           | Augmnt      |
|           |              |          |      | Valve Name: CRD SUPPLY WATER VALVE TO CHARGING WATER HEADER |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |
| V-305-106 | 2            | AC       | 0.5  | SCK   | SA        | A                | C               | -             | C               | GE 197E871 | D-2         | BDO       | OP         |                |                |           |             |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | CC        | RR         |                |                |           | RJ-13       |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | LTH       | Y2         |                |                |           |             |
|           |              |          |      | Valve Name: CHARGING WATER ACCUMULATOR CHECK (TYP OF 137)   |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |
| V-305-108 | 2            | C        | 0.75 | SCK   | SA        | A                | C               | -             | O               | GE 197E871 | E-6         | SM        |            |                |                |           | CTP-IST-007 |
|           |              |          |      | Valve Name: CRD DISCHARGE HEADER CHECK (TYP OF 137)         |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |
| V-305-126 | 2            | B        | 1    | GL  | AO        | A                | C               | O             | O               | GE 197E871 |             | FO        | RR         |                |                |           | RJ-09       |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | PI        | Y2         |                |                |           | CTP-IST-007 |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | SO        | RR         |                |                |           | RJ-09       |
|           |              |          |      | Valve Name: CRD SCRAM INSERTION VALVE (TYP OF 137)          |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |
| V-305-127 | 2            | B        | 0.75 | GL  | AO        | A                | C               | O             | O               | GE 197E871 |             | FO        | RR         |                |                |           | RJ-09       |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | PI        | Y2         |                |                |           | CTP-IST-007 |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | SO        | RR         |                |                |           | RJ-09       |
|           |              |          |      | Valve Name: CRD SCRAM EXHAUST VALVE (TYP OF 137)            |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |
| V-305-138 | 2            | C        | 0.5  | CK  | SA        | A                | O               | -             | C               | GE 197E871 | F-3         | BDO       | OP         |                |                |           |             |
|           |              |          |      |   |           |                  |                 |               |                 |            |             | CC        | Q          |                |                |           |             |
|           |              |          |      | Valve Name: CRD COOLING WATER SUPPLY CHECK (TYP OF 137)     |           |                  |                 |               |                 |            |             |           |            |                |                |           |             |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 241 Containment Spray (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-21-1   | 2            | B        | 12   | GA         | MO        | P                | O               | AI            | O               | GE 148F740 | D-5         | PI        | Y2         |                |                |           |          |
| Valve Name: P-21-1C SUCTION ISOLATION                        |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-21-10  | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 148F740 | B-6         | CC        | Q          |                |                |           |          |
| CO Q   |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| Valve Name: P-21-1A DISCHARGE CHECK                          |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-21-11  | 2            | B        | 14   | GA         | MO        | A                | C               | AI            | O/C             | GE 148F740 | G-6         | PI        | Y2         |                |                |           |          |
| STC Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| STO Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| Valve Name: A LOOP DRYWELL SPRAY INJECTION ISOLATION         |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-21-13  | 2            | B        | 6    | GA         | MO        | A                | O               | AI            | O/C             | GE 148F740 | G-4         | PI        | Y2         |                |                |           |          |
| STC Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| STO Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| Valve Name: B LOOP SUPPRESSION POOL COOLING & TEST ISOL      |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-21-15  | 2            | A        | 4    | GA         | MO        | A                | C               | AI            | O/C             | GE 148F740 | G-4         | LTL       | Y2         |                |                |           |          |
| PI Y2  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| STC Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| STO Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| Valve Name: B LOOP TORUS SPRAY INJECTION ISOLATION           |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-21-17  | 2            | B        | 6    | GA         | MO        | A                | O               | AI            | O/C             | GE 148F740 | G-6         | PI        | Y2         |                |                |           |          |
| STC Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| STO Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| Valve Name: A LOOP SUPPRESSION POOL COOLING & TEST ISOL      |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-21-18  | 2            | A        | 4    | GA         | MO        | A                | C               | -             | O/C             | GE 148F740 | F-7         | LTL       | Y2         |                |                |           |          |
| PI Y2  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| STC Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| STO Q  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| Valve Name: A LOOP TORUS SPRAY INJECTION ISOLATION           |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-21-19  | 2            | C        | 1    | CK         | SA        | A                | C               | -             | O/C             | GE 148F740 | G-3         | CCD       | CM         |                |                |           | CMP      |
| COD CM   |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| CMP  |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| Valve Name: CONTAINMENT SPRAY PUMPS 1-3/1-4 VENT CHECK VALVE |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| V-21-2   | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 148F740 | D-4         | CC        | Q          |                |                |           |          |
| CO Q   |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |
| Valve Name: P-21-1C DISCHARGE CHECK                          |              |          |      |            |           |                  |                 |               |                 |            |             |           |            |                |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 241 Containment Spray (Page 2)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID       | P&ID Coord. | Test Type        | Test Freq.   | Relief Request | Deferred Just. | Tech Pos. | Comments   |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|------------|-------------|------------------|--------------|----------------|----------------|-----------|------------|
| V-21-20  | 2            | C        | 1    | CK         | SA        | A                | C               | -             | O/C             | GE 148F740 | F-7         | CCD<br>COD       | CM<br>CM     |                |                |           | CMP<br>CMP |
| Valve Name: CONTAINMENT SPRAY PUMPS 1-1/1-2 VENT CHECK VALVE |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-21  | 2            | C        |      | RV         | SA        | A                | C               | -             | O/C             | GE 148F740 | D-7         | RT               | Y10          |                |                |           |            |
| Valve Name: HEAT EXCHANGE H-21-1A SHELL SIDE RELIEF          |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-22  | 2            | C        |      | RV         | SA        | A                | C               | -             | O/C             | GE 148F740 | C-7         | RT               | Y10          |                |                |           |            |
| Valve Name: HEAT EXCHANGE H-21-1B SHELL SIDE RELIEF          |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-23  | 2            | C        |      | RV         | SA        | A                | C               | -             | O/C             | GE 148F740 | D-3         | RT               | Y10          |                |                |           |            |
| Valve Name: HEAT EXCHANGE H-21-1C SHELL SIDE RELIEF          |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-24  | 2            | C        |      | RV         | SA        | A                | C               | -             | O/C             | GE 148F740 | C-3         | RT               | Y10          |                |                |           |            |
| Valve Name: HEAT EXCHANGE H-21-1D SHELL SIDE RELIEF          |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-3   | 2            | B        | 12   | GA         | MO        | P                | O               | AI            | O               | GE 148F740 | D-5         | PI               | Y2           |                |                |           |            |
| Valve Name: P-21-1D SUCTION ISOLATION                        |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-4   | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 148F740 | B-4         | CC<br>CO         | Q<br>Q       |                |                |           |            |
| Valve Name: P-21-1D DISCHARGE CHECK                          |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-5   | 2            | B        | 14   | GA         | MO        | A                | C               | AI            | O/C             | GE 148F740 | G-4         | PI<br>STC<br>STO | Y2<br>Q<br>Q |                |                |           |            |
| Valve Name: B LOOP DRYWELL SPRAY INJECTION ISOLATION         |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-7   | 2            | B        | 12   | GA         | MO        | P                | O               | AI            | O               | GE 148F740 | D-5         | PI               | Y2           |                |                |           |            |
| Valve Name: P-21-1B SUCTION ISOLATION                        |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-8   | 2            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | GE 148F740 | D-6         | CC<br>CO         | Q<br>Q       |                |                |           |            |
| Valve Name: P-21-1B DISCHARGE CHECK                          |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |
| V-21-9   | 2            | B        | 12   | GA         | MO        | P                | O               | AI            | O               | GE 148F740 | D-5         | PI               | Y2           |                |                |           |            |
| Valve Name: P-21-1A SUCTION ISOLATION                        |              |          |      |            |           |                  |                 |               |                 |            |             |                  |              |                |                |           |            |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 242 Nitrogen Inerting (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID          | P&ID Coord. | Test Type  | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |       |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------------|-------------|--|------------|----------------|----------------|-----------|----------|-------|
| V-23-13  | N/A          | A        | 8    | BTF        | AO        | A                | O/C             | C             | C               | SN 13432.19-1 | F7          | FC   | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ  | AJ         |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI   | Y2         |                |                |           |          | VR-02 |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STC  | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STO  | Q          |                |                |           |          |       |
| Valve Name: NITROGEN PURGE/HARDENED VENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |  |            |                |                |           |          |       |
| V-23-14  | N/A          | A        | 8    | BTF        | AO        | A                | O/C             | C             | C               | SN 13432.19-1 | F7          | FC   | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ  | AJ         |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI   | Y2         |                |                |           |          | VR-02 |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STC  | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STO  | Q          |                |                |           |          |       |
| Valve Name: NITROGEN PURGE/HARDENED VENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |  |            |                |                |           |          |       |
| V-23-15  | N/A          | A        | 8    | BTF        | AO        | A                | O/C             | C             | C               | SN 13432.19-1 | D7          | FC   | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ  | AJ         |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI   | Y2         |                |                |           |          | VR-02 |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STC  | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STO  | Q          |                |                |           |          |       |
| Valve Name: NITROGEN PURGE/HARDENED VENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |  |            |                |                |           |          |       |
| V-23-16  | N/A          | A        | 8    | BTF        | AO        | A                | O/C             | C             | C               | SN 13432.19-1 | D7          | FC   | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ  | AJ         |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI   | Y2         |                |                |           |          | VR-02 |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STC  | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STO  | Q          |                |                |           |          |       |
| Valve Name: NITROGEN PURGE/HARDENED VENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |  |            |                |                |           |          |       |
| V-23-17  | N/A          | A        | 2    | GL         | AO        | A                | O/C             | C             | C               | SN 13432.19-1 | E7          | FC   | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ  | AJ         |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI   | Y2         |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STC  | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | Valve Name: NITROGEN PURGE/HARDENED VENT ISOLATION |            |                |                |           |          |       |
| V-23-18  | N/A          | A        | 2    | GL         | AO        | A                | O/C             | C             | C               | SN 13432.19-1 | E7          | FC   | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ  | AJ         |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI   | Y2         |                |                |           |          | VR-02 |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | STC  | Q          |                |                |           |          |       |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | Valve Name: NITROGEN MAKEUP ISOLATION              |            |                |                |           |          |       |
| Valve Name: NITROGEN MAKEUP ISOLATION              |              |          |      |            |           |                  |                 |               |                 |               |             |  |            |                |                |           |          |       |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 242 Nitrogen Inerting (Page 2)**

| Valve                                    | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID          | P&ID Coord. | Test Type              | Test Freq.         | Relief Request | Deferred Just. | Tech Pos. | Comments |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------------|-------------|------------------------|--------------------|----------------|----------------|-----------|----------|
| V-23-19                                  | N/A          | A        | 2    | GL         | AO        | A                | O/C             | C             | C               | SN 13432.19-1 | E6          | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Y2<br>Q |                |                |           |          |
| Valve Name: NITROGEN MAKEUP ISOLATION    |              |          |      |            |           |                  |                 |               |                 |               |             |                        |                    |                |                |           |          |
| V-23-20                                  | N/A          | A        | 2    | GL         | AO        | A                | O/C             | C             | C               | SN 13432.19-1 | D6          | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Y2<br>Q |                |                |           | VR-02    |
| Valve Name: NITROGEN MAKEUP ISOLATION    |              |          |      |            |           |                  |                 |               |                 |               |             |                        |                    |                |                |           |          |
| V-23-21                                  | N/A          | A        | 2    | GA         | AO        | A                | O/C             | C             | C               | BR 2011       |             | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Y2<br>Q |                |                |           | VR-02    |
| Valve Name: DRYWELL VENT                 |              |          |      |            |           |                  |                 |               |                 |               |             |                        |                    |                |                |           |          |
| V-23-22                                  | N/A          | A        | 2    | GA         | AO        | A                | O/C             | C             | C               | BR 2011       |             | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Y2<br>Q |                |                |           |          |
| Valve Name: DRYWELL VENT                 |              |          |      |            |           |                  |                 |               |                 |               |             |                        |                    |                |                |           |          |
| V-23-357                                 | N/A          | B        | 8    | BTF        | M         | A                | O               | AI            | C               | SN 13432.19-1 | F4          | EC<br>EO               | Y2<br>Y2           |                |                |           |          |
| Valve Name: N2 LINE ISOLATION            |              |          |      |            |           |                  |                 |               |                 |               |             |                        |                    |                |                |           |          |
| V-23-358                                 | N/A          | B        | 8    | BTF        | M         | A                | C               | AI            | O               | SN 13432.19-1 | F4          | EC<br>EO               | Y2<br>Y2           |                |                |           |          |
| Valve Name: HARDENED VENT LINE ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |                        |                    |                |                |           |          |
| V-23-70                                  | N/A          | A        | 0.25 | PLG        | SO        | A                | O               | C             | C               | SN 13432.19-1 |             | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Q<br>Q  |                |                |           |          |
| Valve Name: TIP PURGE ISOLATION          |              |          |      |            |           |                  |                 |               |                 |               |             |                        |                    |                |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 243 Drywell & Suppression (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID          | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| <b>V-26-1</b>                                    | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-6         | CCX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER      |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-26-10</b>                                   | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-4         | CCX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER      |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-26-11</b>                                   | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-4         | CCX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER      |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-26-12</b>                                   | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-4         | CCX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER      |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-26-13</b>                                   | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-4         | CCX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER      |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-26-14</b>                                   | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-4         | CCX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER      |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-26-15</b>                                   | 2            | A/C      | 20   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | G-3         | CCX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |               |             | LTI       | AJ         |                |                |           |          |
| Valve Name: REACTOR BLDG TO TORUS VACUUM BREAKER |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 243 Drywell & Suppression (Page 2)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID          | P&ID Coord. | Test Type                     | Test Freq.              | Relief Request | Deferred Just. | Tech Pos. | Comments   |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------------|-------------|-------------------------------|-------------------------|----------------|----------------|-----------|------------|
| V-26-16  | 2            | A        | 20   | BTF        | AO        | A                | C               | C             | O/C             | GU 3E-243-21- | G-3         | FC<br>LTJ<br>PI<br>STC<br>STO | Q<br>AJ<br>Y2<br>Q<br>Q |                |                |           |            |
| Valve Name: REACTOR BLDG TO TORUS VACUUM BREAKER |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |            |
| V-26-17  | 2            | A/C      | 20   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | G-3         | CCX<br>COX<br>LTJ             | CM<br>CM<br>AJ          |                |                |           | CMP<br>CMP |
| Valve Name: REACTOR BLDG TO TORUS VACUUM BREAKER |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |            |
| V-26-18  | 2            | A        | 20   | BTF        | AO        | A                | C               | C             | O/C             | GU 3E-243-21- | G-3         | FC<br>LTJ<br>PI<br>STC<br>STO | Q<br>AJ<br>Y2<br>Q<br>Q |                |                |           |            |
| Valve Name: REACTOR BLDG TO TORUS VACUUM BREAKER |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |            |
| V-26-2   | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-6         | CCX<br>COX<br>LTL<br>PI       | CM<br>CM<br>Y2<br>Y2    |                |                |           | CMP<br>CMP |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER      |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |            |
| V-26-3   | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-6         | CCX<br>COX<br>LTL<br>PI       | CM<br>CM<br>Y2<br>Y2    |                |                |           | CMP<br>CMP |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER      |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |            |
| V-26-4   | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-6         | CCX<br>COX<br>LTL<br>PI       | CM<br>CM<br>Y2<br>Y2    |                |                |           | CMP<br>CMP |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER      |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |            |



OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 243 Drywell & Suppression (Page 3)**

| Valve                                       | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID          | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-26-5                                      | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | E-6         | CCX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| V-26-6                                      | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | F-6         | CCX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| V-26-7                                      | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | F-6         | CCX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| V-26-8                                      | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | F-6         | CCX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| V-26-9                                      | 2            | A/C      | 18   | CK         | SA        | A                | C               | -             | O/C             | GU 3E-243-21- | F-4         | CCX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | COX       | CM         |                |                |           | CMP      |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTL       | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
| Valve Name: TORUS TO DRYWELL VACUUM BREAKER |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 251 Spent Fuel Pool Cooling (Page 1)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID           | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|----------------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-18-116  | 3            | B        | 5    | GA         | M         | A                | O               | N/A           | O/C             | GE 237E756 Sh1 | B2          | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |                |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: FUEL POOL CLG TO AUG SYS ISOLATION VALVE          |              |          |      |            |           |                  |                 |               |                 |                |             |           |            |                |                |           |          |
| V-18-16   | 3            | B        | 6    | GL         | M         | A                | O               | N/A           | O/C             | GE 237E756 Sh1 | E4          | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |                |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: FUEL POOL HEAT EXCHANGERS DISCHARGE TO ORW SYSTEM |              |          |      |            |           |                  |                 |               |                 |                |             |           |            |                |                |           |          |
| V-18-17   | 3            | B        | 6    | BAL        | M         | A                | C               | N/A           | O/C             | GE 237E756 Sh1 | D4          | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |                |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: FUEL POOL FILTER & DEMIN. BYPASS VALVE            |              |          |      |            |           |                  |                 |               |                 |                |             |           |            |                |                |           |          |
| V-18-2  | 3            | B        | 8    | GA         | M         | A                | O/C             | N/A           | O/C             | GE 237E756 Sh1 | D6          | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |                |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: AUGMENTED SPENT FUEL POOL SYSTEM INLET VALVE      |              |          |      |            |           |                  |                 |               |                 |                |             |           |            |                |                |           |          |
| V-18-34   | 3            | B        | 6    | BAL        | M         | A                | C               | N/A           | C               | GE 237E756 Sh1 | H8          | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |                |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: REACTOR CAVITY DIFFUSERS 'A&B' RECIRC VLV         |              |          |      |            |           |                  |                 |               |                 |                |             |           |            |                |                |           |          |
| V-18-7  | 3            | C        | 4    | CK         | SA        | A                | O/C             | -             | O/C             | GE 237E756 Sh1 | F-5         | CC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |                |             | CO        | Q          |                |                |           |          |
| Valve Name: P-18-1A DISCHARGE CHECK                           |              |          |      |            |           |                  |                 |               |                 |                |             |           |            |                |                |           |          |
| V-18-76   | 3            | C        | 8    | CK         | SA        | A                | C               | -             | O/C             | GE 237E756 Sh1 | B-5         | CC        | RR         |                | RJ-19          |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |                |             | CO        | RR         |                | RJ-19          |           | Augmnt   |
| Valve Name: P-18-1D DISCHARGE CHECK                           |              |          |      |            |           |                  |                 |               |                 |                |             |           |            |                |                |           |          |
| V-18-77   | 3            | C        | 8    | CK         | SA        | A                | C               | -             | O/C             | GE 237E756 Sh1 | C-5         | CC        | RR         |                | RJ-19          |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |                |             | CO        | RR         |                | RJ-19          |           | Augmnt   |
| Valve Name: P-18-1C DISCHARGE CHECK                           |              |          |      |            |           |                  |                 |               |                 |                |             |           |            |                |                |           |          |
| V-18-8  | 3            | C        | 4    | CK         | SA        | A                | O/C             | -             | O/C             | GE 237E756 Sh1 | D-5         | CC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |                |             | CO        | Q          |                |                |           |          |
| Valve Name: P-18-1B DISCHARGE CHECK                           |              |          |      |            |           |                  |                 |               |                 |                |             |           |            |                |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 411 Main Steam (Page 1)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type                    | Test Freq.                | Relief Request | Deferred Just. | Tech Pos. | Comments   |  |
|---------|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|------------------------------|---------------------------|----------------|----------------|-----------|--|--|
| V-1-10  | 1            | A        | 24   | GL         | AO        | A                | O               | C             | C               | BR 2002 | G-5         | FC<br>LTJ<br>PI<br>SP<br>STC | RR<br>AJ<br>Y2<br>Q<br>CS |                |                |           | RJ-01<br><br><br><br><br>CS-04                                 |  |
|         |              |          |      |            |           |                  |                 |               |                 |         |             |                              |                           |                |                |           | Valve Name: MAIN STEAM LINE'B' OUTLET ISOLATION VALVE (NS04-B) |  |
| V-1-160 | 1            | C        | 6    | RV         | SA        | A                | C               | -             | O               | BR 2002 | F-7         | RT                           | M72                       | VR-01          |                |           |  | Valve Name: SOUTH HEADER SAFETY - 1212 psi |
| V-1-161 | 1            | C        | 6    | RV         | SA        | A                | C               | -             | O               | BR 2002 | F-7         | RT                           | M72                       | VR-01          |                |           |  | Valve Name: SOUTH HEADER SAFETY - 1212 psi |
| V-1-162 | 1            | C        | 6    | RV         | SA        | A                | C               | -             | O               | BR 2002 | E-7         | RT                           | M72                       | VR-01          |                |           |  | Valve Name: SOUTH HEADER SAFETY - 1221 psi |
| V-1-163 | 1            | C        | 6    | RV         | SA        | A                | C               | -             | O               | BR 2002 | E-7         | RT                           | M72                       | VR-01          |                |           |  | Valve Name: SOUTH HEADER SAFETY - 1221 psi |
| V-1-164 | 1            | C        | 6    | RV         | SA        | A                | C               | -             | O               | BR 2002 | D-4         | RT                           | M72                       | VR-01          |                |           |  | Valve Name: NORTH HEADER SAFETY - 1221 psi |
| V-1-165 | 1            | C        | 6    | RV         | SA        | A                | C               | -             | O               | BR 2002 | E-4         | RT                           | M72                       | VR-01          |                |           |  | Valve Name: NORTH HEADER SAFETY - 1221 psi |
| V-1-166 | 1            | C        | 6    | RV         | SA        | A                | C               | -             | O               | BR 2002 | E-4         | RT                           | M72                       | VR-01          |                |           |  | Valve Name: NORTH HEADER SAFETY - 1221 psi |
| V-1-167 | 1            | C        | 6    | RV         | SA        | A                | C               | -             | O               | BR 2002 | F-4         | RT                           | M72                       | VR-01          |                |           |  | Valve Name: NORTH HEADER SAFETY- 1212 psi  |
| V-1-168 | 1            | C        | 6    | RV         | SA        | A                | C               | -             | O               | BR 2002 | F-4         | RT                           | M72                       | VR-01          |                |           |  | Valve Name: NORTH HEADER SAFETY - 1212 psi |
| V-1-173 | 1            | B/C      |      | RV         | DF        | A                | C               | C             | O/C             | BR 2002 | E-7         | RT                           | 5Y                        |                |                |           | CTP-IST-010  | Valve Name: ADS ELECTROMATIC RELIEF VALVE  |
| V-1-174 | 1            | B/C      |      | RV         | DF        | A                | C               | C             | O/C             | BR 2002 | E-7         | RT                           | 5Y                        |                |                |           | CTP-IST-010  | Valve Name: ADS ELECTROMATIC RELIEF VALVE  |
| V-1-175 | 1            | B/C      |      | RV         | DF        | A                | C               | C             | O/C             | BR 2002 | F-5         | RT                           | 5Y                        |                |                |           | CTP-IST-010  | Valve Name: ADS ELECTROMATIC RELIEF VALVE  |
| V-1-176 | 1            | B/C      |      | RV         | DF        | A                | C               | C             | O/C             | BR 2002 | F-5         | RT                           | 5Y                        |                |                |           | CTP-IST-010  | Valve Name: ADS ELECTROMATIC RELIEF VALVE  |
| V-1-177 | 1            | B/C      |      | RV         | DF        | A                | C               | C             | O/C             | BR 2002 | F-6         | RT                           | 5Y                        |                |                |           | CTP-IST-010  | Valve Name: ADS ELECTROMATIC RELIEF VALVE  |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 411 Main Steam (Page 2)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type                    | Test Freq.                | Relief Request | Deferred Just. | Tech Pos. | Comments       |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|------------------------------|---------------------------|----------------|----------------|-----------|----------------|
| V-1-190   | 2            | C        | 4    | CK         | SA        | A                | C               | -             | O               | BR 2002 | D-5         | CC<br>CO                     | RR<br>RR                  |                |                |           | RJ-02<br>RJ-02 |
| Valve Name: NORTH HDR EMRV DISCHARGE VACUUM BREAKER           |              |          |      |            |           |                  |                 |               |                 |         |             |                              |                           |                |                |           |                |
| V-1-191   | 2            | C        | 4    | CK         | SA        | A                | C               | -             | O               | BR 2002 | C-5         | CC<br>CO                     | RR<br>RR                  |                |                |           | RJ-02<br>RJ-02 |
| Valve Name: NORTH HDR EMRV DISCHARGE VACUUM BREAKER           |              |          |      |            |           |                  |                 |               |                 |         |             |                              |                           |                |                |           |                |
| V-1-192   | 2            | C        | 4    | CK         | SA        | A                | C               | -             | O               | BR 2002 | C-6         | CC<br>CO                     | RR<br>RR                  |                |                |           | RJ-02<br>RJ-02 |
| Valve Name: SOUTH HDR EMRV DISCHARGE VACUUM BREAKER           |              |          |      |            |           |                  |                 |               |                 |         |             |                              |                           |                |                |           |                |
| V-1-193   | 2            | C        | 4    | CK         | SA        | A                | C               | -             | O               | BR 2002 | D-6         | CC<br>CO                     | RR<br>RR                  |                |                |           | RJ-02<br>RJ-02 |
| Valve Name: SOUTH HDR EMRV DISCHARGE VACUUM BREAKER           |              |          |      |            |           |                  |                 |               |                 |         |             |                              |                           |                |                |           |                |
| V-1-7   | 1            | A        | 24   | GL         | AO        | A                | O               | C             | C               | BR 2002 | B-5         | FC<br>LTJ<br>PI<br>SP<br>STC | RR<br>AJ<br>Y2<br>Q<br>CS |                |                |           | RJ-01<br>CS-04 |
| Valve Name: MAIN STEAM LINE'A' OUTLET ISOLATION VALVE(NS03-A) |              |          |      |            |           |                  |                 |               |                 |         |             |                              |                           |                |                |           |                |
| V-1-8   | 1            | A        | 24   | GL         | AO        | A                | O               | C             | C               | BR 2002 | B-6         | FC<br>LTJ<br>PI<br>SP<br>STC | RR<br>AJ<br>Y2<br>Q<br>CS |                |                |           | RJ-01<br>CS-04 |
| Valve Name: MAIN STEAM LINE'B' OUTLET ISOLATION VALVE (NS03B) |              |          |      |            |           |                  |                 |               |                 |         |             |                              |                           |                |                |           |                |
| V-1-9   | 1            | A        | 24   | GL         | AO        | A                | O               | C             | C               | BR 2002 | G-7         | FC<br>LTJ<br>PI<br>SP<br>STC | RR<br>AJ<br>Y2<br>Q<br>CS |                |                |           | RJ-01<br>CS-04 |
| Valve Name: MAIN STEAM LINE'A' OUTLET ISOLATION VALVE (NS03A) |              |          |      |            |           |                  |                 |               |                 |         |             |                              |                           |                |                |           |                |

**OYSTER CREEK NUCLEAR GENERATING STATION  
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**Attachment 15  
Inservice Testing Valve Table**

**System 422 Reactor Feedwater (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-2-230  | N/A          | B        | 4    | GA         | M         | A                | LO              | AI            | O/C             | BR 2003 | F4          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: "A" FEEDWATER PUMP MANUAL MINIMUM FLOW VALVE |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-2-231  | N/A          | B        | 4    | GA         | M         | A                | LO              | AI            | O/C             | BR 2003 | E4          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: "B" FEEDWATER PUMP MANUAL MINIMUM FLOW VALVE |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-2-232  | N/A          | B        | 4    | GA         | M         | A                | LO              | AI            | O/C             | BR 2003 | C4          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: "C" FEEDWATER PUMP MANUAL MINIMUM FLOW VALVE |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-2-71   | 1            | AC       | 18   | CK         | SA        | A                | O               | -             | C               | BR 2003 | G-2         | BDO       | OP         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CC        | RR         |                |                |           | RJ-03    |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
| Valve Name: FEEDWATER CHECK                              |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-2-72   | 1            | AC       | 18   | CK         | SA        | A                | O               | -             | C               | BR 2003 | G-1         | BDO       | OP         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CC        | RR         |                |                |           | RJ-03    |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
| Valve Name: FEEDWATER CHECK                              |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-2-73   | 1            | AC       | 18   | CK         | SA        | A                | O               | -             | C               | BR 2003 | G-2         | BDO       | OP         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CC        | RR         |                |                |           | RJ-03    |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
| Valve Name: FEEDWATER CHECK                              |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-2-74   | 1            | AC       | 18   | CK         | SA        | A                | O               | -             | C               | BR 2003 | G-1         | BDO       | OP         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CC        | RR         |                |                |           | RJ-03    |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
| Valve Name: FEEDWATER CHECK                              |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 421**

**CONDENSATE SYSTEM (Page 1)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-2-54  | N/A          | B        | 6    | BTF        | M         | A                | O               | AI            | C               | BR 2003 | G6          | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: CONDENSATE MAKE-UP VALVE TO CONDENSER 1-A |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-2-55  | N/A          | B        | 6    | BTF        | M         | A                | O               | AI            | C               | BR 2003 | G8          | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: CONDENSATE MAKE-UP VALVE TO CONDENSER 1-B |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-2-56  | N/A          | B        | 6    | BTF        | M         | A                | O               | AI            | C               | BR 2003 | G10         | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: CONDENSATE MAKE-UP VALVE TO CONDENSER 1-C |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-2-90  | N/A          | B        | 10   | BTF        | AO        | A                | O               | C             | C               | BR 2003 | C-7         | FC        | RR         |                | RJ-15          |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |         |             | STC       | RR         |                | RJ-15          |           | Augmnt   |
| Valve Name: CONDENSATE STORAGE TANK ISOLATION         |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 424 Condensate Transfer (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type       | Test Freq.   | Relief Request | Deferred Just. | Tech Pos. | Comments         |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-----------------|--------------|----------------|----------------|-----------|------------------|
| V-11-108   | 3            | B        | 2    | GL         | M         | A                | LC              | AI            | O/C             | BR 2004 | C6          | EC<br>EO        | Y2<br>Y2     |                |                |           | Augmnt<br>Augmnt |
| Valve Name: CORE SPRAY FILL & MAKE-UP VALVE                      |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-109   | 2            | B        | 2    | GL         | M         | A                | LC              | AI            | O/C             | BR 2004 | B8          | EC<br>EO        | Y2<br>Y2     |                |                |           | Augmnt<br>Augmnt |
| Valve Name: CORE SPRAY FILL & MAKE-UP VALVE                      |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-110   | 2            | B        | 3    | GL         | M         | A                | LC              | AI            | O/C             | BR 2004 | A8          | EC<br>EO        | Y2<br>Y2     |                |                |           | Augmnt<br>Augmnt |
| Valve Name: CORE SPRAY FILL & MAKE-UP VALVE                      |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-111   | 2            | B        | 2    | GL         | M         | A                | LC              | AI            | O/C             | BR 2004 | A8          | EC<br>EO        | Y2<br>Y2     |                |                |           | Augmnt<br>Augmnt |
| Valve Name: CORE SPRAY SYSTEM 1 KEEP FULL REGULATOR BYPASS VLV - |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-12  | 3            | C        | 3    | CK         | SA        | A                | O/C             | -             | O/C             | BR 2004 | D-8         | CCD<br>COD      | CM<br>CM     |                |                |           | CMP<br>CMP       |
| Valve Name: P-11-1 DISCHARGE CHECK                               |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-13  | 3            | C        | 3    | CK         | SA        | A                | O/C             | -             | O/C             | BR 2004 | C-7         | CCD<br>COD      | CM<br>CM     |                |                |           | CMP<br>CMP       |
| Valve Name: P-11-2 DISCHARGE CHECK                               |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-247   | 3            | B        | 10   | GA         | M         | A                | C               | AI            | O/C             | BR 2004 | F9          | EC<br>EO        | Y2<br>Y2     |                |                |           | Augmnt<br>Augmnt |
| Valve Name: CONDENSATE STORAGE TANK ISOLATION VALVE              |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-249   | 3            | C        | 3    | CK         | SA        | A                | C               | -             | C               | BR2004  | B10         | CCD<br>COD      | CM<br>CM     |                |                |           | CMP<br>CMP       |
| Valve Name: WD SUPPLY TO EMERG COND UPSTREAM CHK                 |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-250   | 3            | C        | 3    | CK         | SA        | A                | C               | -             | C               | BR2004  | B10         | CCD<br>COD      | CM<br>CM     |                |                |           | CMP<br>CMP       |
| Valve Name: WD SUPPLY TO EMERG COND UPSTREAM CHK                 |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-257   | 3            | B        | 3    | GL         | AO        | A                | C               | O             | O               | BR 2004 | C9          | FO<br>PI<br>STO | Q<br>Y2<br>Q |                |                |           |                  |
| Valve Name: COND TRANSF AOV FOR IC MAKE UP                       |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |
| V-11-261   | 3            | C        | 3    | CK         | SA        | A                | C               | C             | O               | BR 2004 | B9          | CCD<br>COD      | CM<br>CM     |                |                |           | CMP<br>CMP       |
| Valve Name: COND TRANSF CK VALVE FOR IC MAKE UP                  |              |          |      |            |           |                  |                 |               |                 |         |             |                 |              |                |                |           |                  |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 424 Condensate Transfer (Page 2)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-11-3   | 3            | C        | 2    | CK         | SA        | A                | O/C             | -             | O               | BR 2004 | D-9         | CCD       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | COD       | CM         |                |                |           |          |
| Valve Name: P-11-1 MIN FLOW RECIRC CHECK                 |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-11-33  | 3            | C        | 2.5  | CK         | SA        | A                | C               | -             | O/C             | BR 2004 | A-10        | CCD       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CCU       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | COF       | CM         |                |                |           | CMP      |
| Valve Name: ISOLATION CONDENSER NE01-B MAKEUP CHECK      |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-11-34  | 3            | B        | 2.5  | GL         | AO        | A                | C               |               | O               | BR 2004 | B-10        | FO        | Q          |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | PI        | Y2         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | STO       | Q          |                |                |           |          |
| Valve Name: ISOLATION CONDENSER NE01-B MAKEUP ISOLATION  |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-11-35  | 3            | C        | 2.5  | CK         | SA        | A                | C               | -             | O/C             | BR 2004 | B-10        | CCD       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CCU       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | COF       | CM         |                |                |           | CMP      |
| Valve Name: ISOLATION CONDENSER NE01-A MAKEUP CHECK      |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-11-36  | 3            | B        | 2.5  | GL         | AO        | A                | C               |               | O               | BR 2004 | B-10        | FO        | Q          |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | PI        | Y2         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | STO       | Q          |                |                |           |          |
| Valve Name: ISOLATION CONDENSER NE01-A MAKEUP ISOLATION  |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-11-41  | 3            | B        | 3    | DIA        | M         | A                | O               | AI            | O/C             | BR 2004 | B9          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: EMERGENCY CONDENSER SUPPLY ISOLATION VALVE   |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-11-42  | 3            | C        | 3    | CK         | SA        | A                | C               | -             | O               | BR 2004 | B-9         | CCD       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | COD       | CM         |                |                |           | CMP      |
| Valve Name: ISOLATION CONDENSERS MAKEUP CHECK            |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-11-49  | 3            | B        | 3    | DIA        | M         | A                | C               | AI            | O/C             | BR 2004 | B-9         | EC        | Q          |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Q          |                |                |           |          |
| Valve Name: FIRE WATER MAKEUP TO ISOLATION CONDENSERS    |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-11-63  | N/A          | B        | 2    | DIA        | M         | A                | O               | AI            | C               | BR 2004 | B9          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: TELL TALE VALVE ON MAKE-UP TO EMERGENCY COND |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-11-7   | 3            | C        | 2    | CK         | SA        | A                | O/C             | -             | O               | BR 2004 | D-9         | CCD       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | COD       | CM         |                |                |           | CMP      |
| Valve Name: P-11-2 MIN FLOW RECIRC CHECK                 |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |



**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 531**

**Service Water (Page 1)**

| Valve                                | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |        |
|--------------------------------------|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-----------|------------|----------------|----------------|-----------|----------|--------|
| <b>V-3-62</b>                        | N/A          | C        | 16   | CK         | SA        | A                | O/C             | -             | O/C             | BR 2005 | F-8         | CCD       | CM         |                |                |           | CMP/Au   |        |
|                                      |              |          |      |            |           |                  |                 |               |                 |         |             | CCF       | CM         |                |                |           |          |        |
|                                      |              |          |      |            |           |                  |                 |               |                 |         |             | COD       | CM         |                |                |           |          | CMP/Au |
|                                      |              |          |      |            |           |                  |                 |               |                 |         |             | COF       | CM         |                |                |           |          |        |
| Valve Name: P-3-001A DISCHARGE CHECK |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |        |
| <b>V-3-63</b>                        | N/A          | C        | 16   | CK         | SA        | A                | O/C             | -             | O/C             | BR 2005 | F-7         | CCD       | CM         |                |                |           | CMP/Au   |        |
|                                      |              |          |      |            |           |                  |                 |               |                 |         |             | CCF       | CM         |                |                |           |          |        |
|                                      |              |          |      |            |           |                  |                 |               |                 |         |             | COD       | CM         |                |                |           |          | CMP/Au |
|                                      |              |          |      |            |           |                  |                 |               |                 |         |             | COF       | CM         |                |                |           |          |        |
| Valve Name: P-3-001B DISCHARGE CHECK |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |        |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 532 Emergency Service Water (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-3-131  | 3            | C        | 2    | CK         | SA        | A                | O               | -             | C               | BR 2005 | D-7         | CCD       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | COD       | CM         |                |                |           | CMP      |
| Valve Name: SW TO ESW B LOOP CHECK                           |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-133  | 3            | C        | 2    | CK         | SA        | A                | O               | -             | C               | BR 2005 | E-7         | CCD       | CM         |                |                |           | CMP      |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | COD       | CM         |                |                |           | CMP      |
| Valve Name: SW TO ESW A LOOP CHECK                           |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-65   | 3            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | BR 2005 | C-7         | CC        | Q          |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CO        | Q          |                |                |           |          |
| Valve Name: ESW PUMP P-3-3D DISCHARGE CHECK                  |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-66   | 3            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | BR 2005 | C-8         | CC        | Q          |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CO        | Q          |                |                |           |          |
| Valve Name: ESW PUMP P-3-3C DISCHARGE CHECK                  |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-67   | 3            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | BR 2005 | G-8         | CC        | Q          |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CO        | Q          |                |                |           |          |
| Valve Name: ESW PUMP P-3-3B DISCHARGE CHECK                  |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-68   | 3            | C        | 10   | CK         | SA        | A                | C               | -             | O/C             | BR 2005 | G-7         | CC        | Q          |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CO        | Q          |                |                |           |          |
| Valve Name: ESW PUMP P-3-3A DISCHARGE CHECK                  |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-82   | 3            | C        |      | RV         | SA        | A                | C               | -             | O/C             | BR 2005 | F-4         | RT        | Y10        |                |                |           |          |
| Valve Name: CONTAINMENT SPRAY HX H-21-1B TUBE SIDE RELIEF    |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-83   | 3            | C        |      | RV         | SA        | A                | C               | -             | O/C             | BR 2005 | H-4         | RT        | Y10        |                |                |           |          |
| Valve Name: CONTAINMENT SPRAY HX H-21-1A TUBE SIDE RELIEF    |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-84   | 3            | C        |      | RV         | SA        | A                | C               | -             | O/C             | BR 2005 | E-4         | RT        | Y10        |                |                |           |          |
| Valve Name: CONTAINMENT SPRAY HX H-21-1C TUBE SIDE RELIEF    |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-85   | 3            | C        |      | RV         | SA        | A                | C               | -             | O/C             | BR 2005 | C-4         | RT        | Y10        |                |                |           |          |
| Valve Name: CONTAINMENT SPRAY HX H-21-1D TUBE SIDE RELIEF    |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-87   | 3            | B        | 14   | BTF        | M         | P                | LT              | AI            | T               | BR 2005 | C-2         | PI        | Y2         |                |                |           |          |
| Valve Name: HEAT EXCHANGERS H-21-1C & 1D OVERBOARD ISOLATION |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-3-88   | 3            | B        | 14   | BTF        | M         | P                | LT              | AI            | T               | BR 2005 | F-2         | PI        | Y2         |                |                |           |          |
| Valve Name: HEAT EXCHANGERS H-21-1A & 1B OVERBOARD ISOLATION |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 541 Reactor Building Closed Cooling Water (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-5-106  | 3            | B        | 14   | BTF        | MO        | A                | C               | AI            | TH              | BR 2006 | G6          | PI        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | STC       | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | STO       | Y2         |                |                |           | Augmnt   |
| Valve Name: SDC HEAT EXCHANGERS A,B,C HEADER OUTLET VALVE    |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-5-107  | 3            | B        | 8    | BTF        | M         | A                | C               | AI            | O/C             | BR 2006 | H5          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: SDC HEAT EXCHANGER NU01-A RBCCW INLET ISOLATION  |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-5-108  | 3            | B        | 8    | BTF        | M         | A                | C               | AI            | O/C             | BR 2006 | G5          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: SDC HEAT EXCHANGER NU01-B RBCCW INLET ISOLATION  |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-5-109  | 3            | B        | 8    | BTF        | M         | A                | C               | AI            | O/C             | BR 2006 | F5          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: SDC HEAT EXCHANGER NU01-C RBCCW INLET ISOLATION  |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-5-110  | 3            | B        | 8    | BTF        | M         | A                | C               | AI            | O/C             | BR 2006 | H6          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: SDC HEAT EXCHANGER NU01-A RBCCW OUTLET ISOLATION |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-5-111  | 3            | B        | 8    | BTF        | M         | A                | C               | AI            | O/C             | BR 2006 | G6          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: SDC HEAT EXCHANGER NU01-B RBCCW OUTLET ISOLATION |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-5-112  | 3            | B        | 8    | BTF        | M         | A                | C               | AI            | O/C             | BR 2006 | G6          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: SDC HEAT EXCHANGER NU01-C RBCCW OUTLET ISOLATION |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-5-136  | 3            | B        | 12   | BTF        | M         | A                | C               | AI            | TH              | BR 2006 | E6          | EC        | Y2         |                |                |           | Augmnt   |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: RBCCW HEAT EXCHANGERS 1-1 & 1-2 BYPASS VALVE     |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-5-147  | 2            | A        | 6    | GA         | MO        | A                | O               | AI            | C               | BR 2006 | B-5         | LTJ       | AJ         |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | PI        | Y2         | VR-02          |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | STC       | CS         |                |                | CS-01     |          |
| Valve Name: RBCCW SUPPLY CONTAINMENT ISOLATION               |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-5-153  | 3            | C        | 12   | CK         | SA        | A                | O/C             | -             | O/C             | BR 2006 | C-5         | CC        | Q          |                |                |           |          |
|  |              |          |      |            |           |                  |                 |               |                 |         |             | CO        | Q          |                |                |           |          |
| Valve Name: P-5-1 DISCHARGE CHECK                            |              |          |      |            |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |

OYSTER CREEK NUCLEAR GENERATING STATION  
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Attachment 15  
Inservice Testing Valve Table

**System 541 Reactor Building Closed Cooling Water (Page 2)**

| Valve  | Safety Class | Category | Size  | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type         | Test Freq.     | Relief Request | Deferred Just. | Tech Pos. | Comments       |
|--|--------------|----------|-------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-------------------|----------------|----------------|----------------|-----------|----------------|
| V-5-154  | 3            | C        | 12    | CK         | SA        | A                | O/C             | -             | O/C             | BR 2006 | B-6         | CC<br>CO          | Q<br>Q         |                |                |           |                |
| Valve Name: P-5-2 DISCHARGE CHECK                    |              |          |       |            |           |                  |                 |               |                 |         |             |                   |                |                |                |           |                |
| V-5-165  | 2            | AC       | 6     | CK         | SA        | A                | O               | -             | C               | BR 2006 | B-5         | BDO<br>CC<br>LTJ  | OP<br>RR<br>AJ |                |                |           | RJ-04          |
| Valve Name: RBCCW SUPPLY CONTAINMENT ISOLATION CHECK |              |          |       |            |           |                  |                 |               |                 |         |             |                   |                |                |                |           |                |
| V-5-166  | 2            | A        | 6     | GA         | MO        | A                | O               | AI            | C               | BR 2006 | B-3         | LTJ<br>PI<br>STC  | AJ<br>Y2<br>CS |                |                |           | VR-02<br>CS-01 |
| Valve Name: RBCCW RETURN CONTAINMENT ISOLATION       |              |          |       |            |           |                  |                 |               |                 |         |             |                   |                |                |                |           |                |
| V-5-167  | 2            | A        | 6     | GA         | MO        | A                | O               | AI            | C               | BR 2006 | B-3         | LTJ<br>PI<br>STC  | AJ<br>Y2<br>CS |                |                |           | VR-02<br>CS-01 |
| Valve Name: RBCCW RETURN CONTAINMENT ISOLATION       |              |          |       |            |           |                  |                 |               |                 |         |             |                   |                |                |                |           |                |
| V-5-879  | 2            | AC       | 0.375 | CK         | SA        | A                | C               | -             | O/C             | BR 2006 | B-3         | CCD<br>COD<br>LTJ | CM<br>CM<br>AJ |                |                |           | CMP<br>CMP     |
| Valve Name: CIV V-5-166 THERMAL RELIEF CHECK VALVE   |              |          |       |            |           |                  |                 |               |                 |         |             |                   |                |                |                |           |                |

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**Attachment 15  
Inservice Testing Valve Table**

**System 555 Post Accident Sampling (Page 1)**

| Valve  | Safety Class | Category | Size  | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID     | P&ID Coord. | Test Type              | Test Freq.         | Relief Request | Deferred Just. | Tech Pos. | Comments   |
|--|--------------|----------|-------|------------|-----------|------------------|-----------------|---------------|-----------------|----------|-------------|------------------------|--------------------|----------------|----------------|-----------|------------|
| V-40-137   | 1            | AC       | 0.375 | CK         | SA        | A                | C               | -             | O/C             | BR M0012 | G8          | CCF<br>COF<br>LTJ      | CM<br>CM<br>AJ     |                |                |           | CMP<br>CMP |
| Valve Name: CONTAINMENT PENETRATION THERMAL RELIEF CHECK |              |          |       |            |           |                  |                 |               |                 |          |             |                        |                    |                |                |           |            |
| V-40-6   | 1            | A        | 0.75  | GL         | SO        | P                | LC              | C             | C               | BR M0012 | G7          | LTJ<br>PI              | AJ<br>Y2           |                |                |           |            |
| Valve Name: PASS CONTAINMENT ISOLATION                   |              |          |       |            |           |                  |                 |               |                 |          |             |                        |                    |                |                |           |            |
| V-40-8   | 1            | A        | 0.75  | GL         | SO        | P                | LC              | C             | C               | BR M0012 | F8          | LTJ<br>PI              | AJ<br>Y2           |                |                |           |            |
| Valve Name: PASS CONTAINMENT ISOLATION                   |              |          |       |            |           |                  |                 |               |                 |          |             |                        |                    |                |                |           |            |
| V-24-29  | 1            | A        | 0.75  | GL         | AO        | A                | O               | C             | C               | BR M0012 |             | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Y2<br>Q |                |                |           |            |
| Valve Name: REACTOR SAMPLE CONTAINMENT ISOLATION         |              |          |       |            |           |                  |                 |               |                 |          |             |                        |                    |                |                |           |            |
| V-24-30  | 1            | A        | 0.75  | GL         | AO        | A                | O               | C             | C               | BR M0012 |             | FC<br>LTJ<br>PI<br>STC | Q<br>AJ<br>Y2<br>Q |                |                |           |            |
| Valve Name: REACTOR SAMPLE CONTAINMENT ISOLATION         |              |          |       |            |           |                  |                 |               |                 |          |             |                        |                    |                |                |           |            |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 573 Drywell Floor & Equipment Drains (Page 1)**

| Valve   | Safety Class | Category | Size | Valve Type   | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID      | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---------|--------------|----------|------|--|-----------|------------------|-----------------|---------------|-----------------|-----------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-22-1  | 2            | A        | 2    | GA   | AO        | A                | O/C             | C             | C               | JC 147434 | D-7         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | PI        | Y2         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: DRYWELL EQUIP DRAIN TK PUMPS DISCH CONTAINMENT ISO |           |                  |                 |               |                 |           |             |           |            |                |                |           |          |
| V-22-2  | 2            | A        | 2    | GA   | AO        | A                | O/C             | C             | C               | JC 147434 | D-7         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | PI        | Y2         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: DRYWELL EQUIP DRAIN TK PUMPS DISCH CONTAINMENT ISO |           |                  |                 |               |                 |           |             |           |            |                |                |           |          |
| V-22-28 | 2            | A        | 2    | GA   | AO        | A                | O/C             | C             | C               | JC 147434 | D-9         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | PI        | Y2         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: DRYWELL FLR DRN SUMP PUMPS DISCH CONTAINMENT ISOL  |           |                  |                 |               |                 |           |             |           |            |                |                |           |          |
| V-22-29 | 2            | A        | 2    | GA   | AO        | A                | O/C             | C             | C               | JC 147434 | D-9         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | PI        | Y2         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |           |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: DRYWELL FLR DRN SUMP PUMPS DISCH CONTAINMENT ISOL  |           |                  |                 |               |                 |           |             |           |            |                |                |           |          |



OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 666 Hydrogen/Oxygen Monitoring (Page 1)**

| Valve  | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID          | P&ID Coord. | Test Type                     | Test Freq.              | Relief Request | Deferred Just. | Tech Pos. | Comments           |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------------|-------------|-------------------------------|-------------------------|----------------|----------------|-----------|--------------------|
| V-38-10  | N/A          | A        | 0.75 | GL         | SO        | A                | O               | C             | C               | BR M0012      | C7          | FC<br>LTJ<br>SC               | RR<br>AJ<br>RR          |                |                |           | RJ-22<br><br>RJ-22 |
| Valve Name: DRYWELL O2 SAMPLE CONTAINMENT ISOLATION    |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |                    |
| V-38-16  | N/A          | A        | 0.75 | GL         | SO        | A                | C               | C             | C               | GU 3E-666-21- | B8          | FC<br>LTJ<br>SC               | RR<br>AJ<br>RR          |                |                |           | RJ-22<br><br>RJ-22 |
| Valve Name: CONT PART MON RETURN CONTAINMENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |                    |
| V-38-17  | N/A          | A        | 0.75 | GL         | SO        | A                | C               | C             | C               | GE 237E726    | F4          | FC<br>LTJ<br>SC               | RR<br>AJ<br>RR          |                |                |           | RJ-22<br><br>RJ-22 |
| Valve Name: CONT PART MON RETURN CONTAINMENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |                    |
| V-38-22  | N/A          | A        | 0.25 | GL         | SO        | A                | C               | C             | C               | GU 3E-666-21- | C2          | FC<br>LTJ<br>SC               | RR<br>AJ<br>RR          |                |                |           | RJ-22<br><br>RJ-22 |
| Valve Name: TORUS O2 SAMPLE CONTAINMENT ISOLATION      |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |                    |
| V-38-23  | N/A          | A        | 0.25 | GL         | SO        | A                | O               | C             | C               | GU 3E-666-21- | C2          | FC<br>LTJ<br>SC               | RR<br>AJ<br>RR          |                |                |           | RJ-22<br><br>RJ-22 |
| Valve Name: TORUS O2 SAMPLE CONTAINMENT ISOLATION      |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |                    |
| V-38-37  | N/A          | A        | 1    | GL         | SO        | A                | O/C             | C             | O/C             | GU 3E-666-21- | G2          | FC<br>LTJ<br>PI<br>STC<br>STO | Q<br>AJ<br>Y2<br>Q<br>Q |                |                |           |                    |
| Valve Name: H2/O2 SAMPLE SUPPLY CONTAINMENT ISOLATION  |              |          |      |            |           |                  |                 |               |                 |               |             |                               |                         |                |                |           |                    |



**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 666 Hydrogen/Oxygen Monitoring (Page 2)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID          | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| <b>V-38-38</b>  | N/A          | A        | 1    | GL         | SO        | A                | O/C             | C             | O/C             | GU 3E-666-21- | G2          | FC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ       | AJ         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STC       | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STO       | Q          |                |                |           |          |
| Valve Name: H2/O2 SAMPLE SUPPLY CONTAINMENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-38-39</b>  | N/A          | A        | 1    | GL         | SO        | A                | O/C             | C             | O/C             | GU 3E-666-21- | F2          | FC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ       | AJ         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STC       | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STO       | Q          |                |                |           |          |
| Valve Name: H2/O2 SAMPLE RETURN CONTAINMENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-38-40</b>  | N/A          | A        | 1    | GL         | SO        | A                | O/C             | C             | O/C             | GU 3E-666-21- | F2          | FC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ       | AJ         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STC       | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STO       | Q          |                |                |           |          |
| Valve Name: H2/O2 SAMPLE RETURN CONTAINMENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-38-41</b>  | N/A          | A        | 1    | GL         | SO        | A                | O/C             | C             | O/C             | GU 3E-666-21- | G5          | FC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ       | AJ         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STC       | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STO       | Q          |                |                |           |          |
| Valve Name: H2/O2 SAMPLE SUPPLY CONTAINMENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| <b>V-38-43</b>  | N/A          | A        | 1    | GL         | SO        | A                | O/C             | C             | O/C             | GU 3E-666-21- | G5          | FC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ       | AJ         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STC       | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STO       | Q          |                |                |           |          |
| Valve Name: H2/O2 SAMPLE SUPPLY CONTAINMENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 666 Hydrogen/Oxygen Monitoring (Page 3)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID          | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-38-44   | N/A          | A        | 1    | GL         | SO        | A                | O/C             | C             | O/C             | GU 3E-666-21- | F5          | FC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ       | AJ         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STC       | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STO       | Q          |                |                |           |          |
| Valve Name: H2/O2 SAMPLE RETURN CONTAINMENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| V-38-46   | N/A          | A        | 1    | GL         | SO        | A                | O/C             | C             | O/C             | GU 3E-666-21- | F5          | FC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ       | AJ         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | PI        | Y2         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STC       | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | STO       | Q          |                |                |           |          |
| Valve Name: H2/O2 SAMPLE RETURN CONTAINMENT ISOLATION |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |
| V-38-9  | N/A          | A        | 0.75 | GL         | SO        | A                | O               | C             | C               | BR M0012      | C7          | FC        | RR         |                |                |           | RJ-22    |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | LTJ       | AJ         |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |               |             | SC        | RR         |                |                |           |          |
| Valve Name: DRYWELL O2 SAMPLE CONTAINMENT ISOLATION   |              |          |      |            |           |                  |                 |               |                 |               |             |           |            |                |                |           |          |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

Attachment 15  
Inservice Testing Valve Table

**System 811**

**Fire Protection (Page 1)**

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID         | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|--------------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-9-11  | N/A          | B        | 1    | GA         | M         | A                | O               | AI            | C               | JC19479 Sh3  | E8          | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |              |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: TELL TALE DRAIN VALVE FOR COND STORAGE TANK |              |          |      |            |           |                  |                 |               |                 |              |             |           |            |                |                |           |          |
| V-9-2099  | N/A          | B        | 3    | DIA        | M         | A                | LC              | AI            | O               | JC 19479 Sh3 | H3          | EC        | Q          |                |                |           |          |
|   |              |          |      |            |           |                  |                 |               |                 |              |             | EO        | Q          |                |                |           |          |
| Valve Name: FIRE WATER MAKEUP TO ISOLATION CONDENSERS   |              |          |      |            |           |                  |                 |               |                 |              |             |           |            |                |                |           |          |
| V-9-9   | N/A          | B        | 10   | GA         | M         | A                | LC              | AI            | O               | JC19479 Sh3  | E8          | EC        | Y2         |                |                |           | Augmnt   |
|   |              |          |      |            |           |                  |                 |               |                 |              |             | EO        | Y2         |                |                |           | Augmnt   |
| Valve Name: FIRE WATER CROSSTIE TO COND STORAGE TANK    |              |          |      |            |           |                  |                 |               |                 |              |             |           |            |                |                |           |          |

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 822 Reactor Building Ventilation (Page 1)**

| Valve   | Safety Class | Category | Size | Valve Type   | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---------|--------------|----------|------|--|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-27-1  | N/A          | A        | 18   | BTF  | AO        | A                | O/C             | C             | C               | BR 2011 | D-6         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | PI        | Y2         | VR-02          |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: RB VENTILATION EXHAUST CONTAINMENT ISOLATION |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-27-2  | N/A          | A        | 18   | BTF  | AO        | A                | O/C             | C             | C               | BR 2011 | D-6         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | PI        | Y2         | VR-02          |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: RB VENTILATION EXHAUST CONTAINMENT ISOLATION |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-27-3  | N/A          | A        | 18   | BTF  | AO        | A                | O/C             | C             | C               | BR 2011 | E-8         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | PI        | Y2         | VR-02          |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: RB VENTILATION SUPPLY CONTAINMENT ISOLATION  |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-27-4  | N/A          | A        | 18   | BTF  | AO        | A                | O/C             | C             | C               | BR 2011 | E-8         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | PI        | Y2         | VR-02          |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: RB VENTILATION SUPPLY CONTAINMENT ISOLATION  |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-28-17 | N/A          | A        | 12   | BTF  | AO        | A                | O/C             | C             | C               | BR 2011 | D-5         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | PI        | Y2         | VR-02          |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: TORUS TO VENT EXHAUST CONTAINMENT ISOLATION  |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |
| V-28-18 | N/A          | A        | 12   | BTF  | AO        | A                | O/C             | C             | C               | BR 2011 | D-5         | FC        | Q          |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | PI        | Y2         | VR-02          |                |           |          |
|         |              |          |      |  |           |                  |                 |               |                 |         |             | STC       | Q          |                |                |           |          |
|         |              |          |      | Valve Name: TORUS TO VENT EXHAUST CONTAINMENT ISOLATION  |           |                  |                 |               |                 |         |             |           |            |                |                |           |          |

OYSTER CREEK NUCLEAR GENERATING STATION  
 Inservice Testing Program Plan

Attachment 15  
 Inservice Testing Valve Table

System 822

Reactor Building Ventilation (Page 2)

| Valve   | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID    | P&ID Coord. | Test Type | Test Freq. | Relief Request | Deferred Just. | Tech Pos. | Comments |
|---------|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|---------|-------------|-----------|------------|----------------|----------------|-----------|----------|
| V-28-47 | N/A          | A        | 2    | GA         | AO        | A                | O/C             | C             | C               | BR 2011 |             | FC        | Q          |                |                |           |          |
|         |              |          |      |            |           |                  |                 |               |                 |         |             | LTJ       | AJ         |                |                |           |          |
|         |              |          |      |            |           |                  |                 |               |                 |         |             | PI        | Y2         | VR-02          |                |           |          |
|         |              |          |      |            |           |                  |                 |               |                 |         |             | STC       | Q          |                |                |           |          |

Valve Name: TORUS TO VENT EXHAUST CONTAINMENT ISOLATION

**OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan**

**Attachment 15  
Inservice Testing Valve Table**

**System 852**

**Instrument Air (Page 1)**

| Valve                                      | Safety Class | Category | Size | Valve Type | Act. Type | Active / Passive | Normal Position | Fail Position | Safety Position | P&ID         | P&ID Coord. | Test Type              | Test Freq.           | Relief Request | Deferred Just. | Tech Pos. | Comments               |  |
|--|--------------|----------|------|------------|-----------|------------------|-----------------|---------------|-----------------|--------------|-------------|------------------------|----------------------|----------------|----------------|-----------|------------------------|--|
| V-6-393                                    | N/A          | AC       | 2    | CK         | SA        | A                | O               | -             | C               | BR 2013 SH6  | G7          | BDO<br>CC<br>LTJ       | OP<br>RR<br>AJ       |                |                |           | RJ-05                  |  |
| Valve Name: IA CONTAINMENT ISOLATION CHECK |              |          |      |            |           |                  |                 |               |                 |              |             |                        |                      |                |                |           |                        |  |
| V-6-395                                    | N/A          | A        | 2    | GA         | AO        | A                | O               | C             | C               | BR 2013 SH 6 | G7          | FC<br>LTJ<br>PI<br>STC | RR<br>AJ<br>Y2<br>RR |                |                |           | RJ-12<br><br><br>RJ-12 |  |
| Valve Name: IA CONTAINMENT ISOLATION       |              |          |      |            |           |                  |                 |               |                 |              |             |                        |                      |                |                |           |                        |  |

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**ATTACHMENT 16**  
**CHECK VALVE CONDITION MONITORING PLAN INDEX**

OYSTER CREEK NUCLEAR GENERATING STATION  
Inservice Testing Program Plan

**ATTACHMENT 16**

**Valves in Check Valve Condition Monitoring Program**

Valves shown in this table are monitored in the Check Valve Condition Monitoring Program. The details for each valve including individual valve testing information, can be found in Attachment 15 of this Program Plan. The Test Plan and Test Analysis review for each valve can be found in ISTPA in the Section for the Check Valve Condition Monitoring Program.

| Item | EIN      | Group    | Sample Group | Description                                |
|------|----------|----------|--------------|--|
| 1    | V-3-131  | CMP-3-1  | CV-3-131     | SW TO ESW B LOOP CHECK                     |
| 2    | V-3-133  | CMP-3-1  | CV-3-133     | SW TO ESW A LOOP CHECK                     |
| 3    | V-3-62   | CMP-3-2  | CV-3-62      | P-3-001A DISCHARGE CHECK                   |
| 4    | V-3-63   | CMP-3-2  | CV-3-63      | P-3-001B DISCHARGE CHECK                   |
| 5    | V-05-879 | CMP-5-1  | CV-5-879     | CIV V-5-166 THERMAL RELIEF CHECK VALVE     |
| 6    | V-11-12  | CMP-11-1 | CV-11-12     | P-11-1 DISCHARGE CHECK                     |
| 7    | V-11-13  | CMP-11-1 | CV-11-13     | P-11-2 DISCHARGE CHECK                     |
| 8    | V-11-33  | CMP-11-2 | CV-11-33     | ISOLATION CONDENSER NE01-B MAKEUP CHECK    |
| 9    | V-11-35  | CMP-11-2 | CV-11-35     | ISOLATION CONDENSER NE01-A MAKEUP CHECK    |
| 10   | V-11-42  | CMP-11-3 | CV-11-42     | ISOLATION CONDENSERS MAKEUP CHECK          |
| 11   | V-11-3   | CMP-11-4 | CV-11-3      | P-11-1 MIN FLOW RECIRC CHECK               |
| 12   | V-11-7   | CMP-11-4 | CV-11-7      | P-11-2 MIN FLOW RECIRC CHECK               |
| 13   | V-11-249 | CMP-11-5 | CV-11-249    | WD SUPPLY TO EMERG COND UPSTREAM CHECK     |
| 14   | V-11-250 | CMP-11-5 | CV-11-250    | WD SUPPLY TO EMERG COND UPSTREAM CHECK     |
| 15   | V-11-261 | CMP-11-6 | CV-11-261    | CONDENSATE TRANSFER CK VLV FOR IC MAKEUP   |
| 16   | V-14-162 | CMP-14-1 | CV-14-162    | V-14-37 BYPASS THERMAL RELIEF CHECK VALVE  |
| 17   | V-14-165 | CMP-14-1 | CV-14-165    | V-14-36 BYPASS THERMAL RELIEF CHECK VALVE  |
| 18   | V-16-84  | CMP-16-1 | CV-16-84     | RWCU RELIEF VLV V-16-76 VENT LINE TO TORUS |
| 19   | V-21-19  | CMP-21-1 | CV-21-19     | CONTMENT SPRAY PMPS 1-3/1-4 VENT CK VALVE  |
| 20   | V-21-20  | CMP-21-1 | CV-21-20     | CONTMENT SPRAY PMPS 1-1/1-2 VENT CK VALVE  |
| 21   | V-26-1   | CMP-26-1 | CV-26-1      | TORUS TO DRYWELL VACUUM BREAKER            |
| 22   | V-26-10  | CMP-26-1 | CV-26-10     | TORUS TO DRYWELL VACUUM BREAKER            |
| 23   | V-26-11  | CMP-26-1 | CV-26-11     | TORUS TO DRYWELL VACUUM BREAKER            |
| 24   | V-26-12  | CMP-26-1 | CV-26-12     | TORUS TO DRYWELL VACUUM BREAKER            |
| 25   | V-26-13  | CMP-26-1 | CV-26-13     | TORUS TO DRYWELL VACUUM BREAKER            |
| 26   | V-26-14  | CMP-26-1 | CV-26-14     | TORUS TO DRYWELL VACUUM BREAKER            |
| 27   | V-26-2   | CMP-26-1 | CV-26-2      | TORUS TO DRYWELL VACUUM BREAKER            |
| 28   | V-26-3   | CMP-26-1 | CV-26-3      | TORUS TO DRYWELL VACUUM BREAKER            |
| 29   | V-26-4   | CMP-26-1 | CV-26-4      | TORUS TO DRYWELL VACUUM BREAKER            |
| 30   | V-26-5   | CMP-26-1 | CV-26-5      | TORUS TO DRYWELL VACUUM BREAKER            |
| 31   | V-26-6   | CMP-26-1 | CV-26-6      | TORUS TO DRYWELL VACUUM BREAKER            |
| 32   | V-26-7   | CMP-26-1 | CV-26-7      | TORUS TO DRYWELL VACUUM BREAKER            |
| 33   | V-26-8   | CMP-26-1 | CV-26-8      | TORUS TO DRYWELL VACUUM BREAKER            |
| 34   | V-26-9   | CMP-26-1 | CV-26-9      | TORUS TO DRYWELL VACUUM BREAKER            |
| 35   | V-26-15  | CMP-26-2 | CV-26-15     | REACTOR BLDG TO TORUS VACUUM BREAKER       |
| 36   | V-26-17  | CMP-26-2 | CV-26-17     | REACTOR BLDG TO TORUS VACUUM BREAKER       |
| 37   | V-40-137 | CMP-40-1 | CV-40-137    | CONTAINMENT PENET THERMAL RELIEF CHECK     |