ENGINEERING DEPARTMENT
PERFORMANCE ENGINEERING

INSERVICE INSPECTION PLAN
(ISI Plan)

Volume I

Second Ten-Year Nuclear Interval Pump and Valve Inservice Testing Program

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PUMP AND VALVE INSERVICE TESTING PROGRAM

FOR

DAVIS-BESSE NUCLEAR POWER STATION

SECTION I

INTRODUCTION

I. INTRODUCTION

I.1 GENERAL

This document presents the program for inservice testing (IST) of pumps and valves at the Davis-Besse Nuclear Power Station in compliance with the requirements of 10 CFR 50.55a. According to 10 CFR 50.55a(g)(4)(ii), following completion of the first 120-month inspection interval, successive 120-month inspection intervals shall comply with the requirements of the latest edition and addenda of the American Society of Mechanical Engineers (ASME) Code incorporated by reference in paragraph (b) of 10 CFR 50.55a 12 months prior to the start of the 120-month inspection interval. The second 120-month inspection interval for the Davis-Besse Nuclear Power Station start date was September 21, 1990. This start date for the second 120-month inspection interval was in compliance with the requirements of Section XI of the ASME Boiler and Pressure Vessel Code, 1986 Edition.

I.2 Basis

NRC Regulations

Code of Federal Regulations 10CFR50.55a(g)(4)(ii) establishes the applicable edition and addenda of Section XI of the ASME Boiler and Pressure Vessel Code to be used for each successive inservice inspection interval for a nuclear power plant. This paragraph states:

> "Inservice examinations of components, inservice tests to verify operational readiness of pumps and valves whose function is required for safety, and system pressure tests, conducted during successive 120-month inspection intervals shall comply with the requirements of the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section 12 months prior to the start of the 120-month inspection interval, subject to the limitations and modifications listed in paragraph (b) of this section."

The latest edition of ASME Section XI referenced in paragraph (b) of 10CFR50.55a is the 1986 Edition and accordingly the second 10-year IST program for DBNPS shall comply with 1986 Edition of ASME Section XI.

In addition to the reference Code edition and addenda, this program has been prepared in compliance with NRC guidance contained in "Guidance for Preparing Pump and Valve Testing Program Descriptions and Associated Relief Requests Pursuant to 10CFR50.55a(g)" and the guidance contained in Generic Letter 89-04. These three documents provide the basis for selection of components, test requirements, relief requests, and format.

I.3 Scope

The Pump and Valve Inservice Testing Program provides testing requirements for all safety-related pumps and valves. Safety-related components are those required by either position or movement to:

a) shut down the reactor to the safe shutdown condition*
b) maintain the reactor in the safe shutdown condition*
c) mitigate the consequences of an accident

*Safe reactor shutdown for the Davis-Besse Nuclear Power Station is defined in Section 7.4.1 of the USAR as that station condition in which the reactor is 1.0 percent subcritical and the reactor coolant system temperature and pressure are in the normal operating range.

Safety-related systems and components include both ASME Code Class 1, 2, and 3 as well as non-class systems and components if they are safety-related. The construction permit for Davis-Besse Nuclear Power Station was issued on March 24, 1971.

I.3.1 Criteria for Safe Shutdown Conditions

Section XI, IWV 1100 Scope addresses equipment to be tested as "..required to perform a specific function in shutting down a reactor to the cold shutdown condition, in mitigating the consequences of an accident or in providing overpressure protection." Davis-Besse Power Station defines shutting down the reactor per Section 7.4.1 of the USAR as that station condition in which the reactor is 1.0 percent subcritical and the reactor coolant system temperature and pressure are in the normal operating range. Per Davis-Besse Technical Specifications this condition is defined as Mode 3, Hot Standby. A Cold Shutdown condition is not required to shut down the reactor. This is based on the above conditions which is part of the licensing basis for the Davis-Besse Nuclear Power Station.

I.4 Augmented Components

Plant test procedures, manufacturer's recommendations, and the Davis-Besse Technical Specifications may require testing of additional pumps and valves not within the scope of Section XI testing, as defined above. These additional test requirements are not addressed by this program.

I.5 General Program Concept

Section XI requires quarterly testing of all components unless it is impractical to do so. This program specifies quarterly testing of pumps and valves unless it has been determined that such testing would:

1. Be impractical due to system or component design.
2. Render a safety-related system inoperable for an extended length of time.
3. Cause a reactor scram or turbine trip.
4. Require significant deviations from normal operations.
5. Require entry into inaccessible plant areas.
6. Increase the possibility of an inter-system LOCA.

Excluded from exercising during normal operations are all valves which, if exercised, could place the plant in an

unsafe condition. Cases where valve exercising could compromise plant safety include:

1. All valves whose failure in a nonconservative position during the cycling test would cause a loss of system function will not be exercised. Valves in this category would typically include all non-redundant valves in lines such as single discharge line from the Borated Water Storage Tank. Other valves may fall into this category under certain system configurations or plant operating modes. For example, when one train of a redundant system such as ECCS is inoperable, non-redundant valves in the remaining train will not be stroked since their failure in the closed position would cause a loss of total system function.

2. All valves, whose failure to close during a cycling test would result in a loss of containment integrity will not be tested. Valves in this category would typically include all valves in containment penetrations where the redundant valve is open.

3. All valves, which when cycled, could subject a system to pressures in excess of their design pressures. It is assumed for purpose of a cycling test, that one or more of the upstream check valves has failed unless positive methods are available for determining the pressure or lack thereof on the high pressure side of the valve to be cycled. Valves in this category would typically include the isolation valves of the residual heat removal/shutdown cooling system and, in some cases certain ECCS valves.

Each component excluded from quarterly testing has been analyzed to determine when appropriate testing may be performed. If exercising of a valve is not practical during plant operation, the Code allows part-stroke exercising during normal plant operation, and full-stroke exercising at cold shutdown.

Since the Code allows testing at cold shutdown, this program does not request relief for those valves for which testing is delayed until cold shutdown.

The Valve IST Program does provide a justification for the delay of testing until cold shutdown. These justifications are prepared in a format similar to relief requests, and are included following the Valve Test Tables for each system.

Where it has been determined that it is impractical to comply with Code requirements, 10 CFR 50.55a(a)(3) requires that a relief request be submitted to the NRC. NRC Generic Letter 89-04 provides preapproval for several Code alternative test requirements. The Generic Letter states that if a component is

tested consistent with the positions taken in Attachment 1 of Generic Letter 89-04 as alternatives to the Code requirements, it should be noted in the IST program and approval is granted through the Generic Letter. Since the Generic Letter grants preapproval of Code alternative test requirements, this program does not request relief for those alternatives addressed by the Generic Letter.

This program does provide a justification for the need to apply the preapproved Code alternative test requirements. These justifications are prepared in a format similar to relief requests, and are included in the program following the component test tables.

Where it has been determined that testing is not practical during plant operation, or at cold shutdown, and is not addressed by NRC Generic Letter 89-04, a specific relief request has been prepared. Each relief request provides justification for not performing the Code required testing, and provides appropriate alternative testing.

In addition to specific relief requests, general relief requests which address specific Code requirements found to be impractical for this site have been prepared. Because of the general nature of these relief requests, and the number of components involved, they are presented in separate sections and are not repeated in the individual system sections.

Cold Shutdown and Refueling as used in this test program includes mode changes going into and coming out of plant Technical Specifications defined modes 5 and 6. Because of unique system operating conditions, it will be necessary to perform some tests during mode change. For example, a steam driven turbine scheduled for testing at cold shutdown cannot be tested during mode 5 when there is no steam available. In this case, testing will be performed during a mode change when sufficient steam is available.

I.6 Organization

The Pump and Valve Inservice Testing Program is organized into three independent sections, each of which can be removed from the Program for review. Section I presents the general program commitment basis and the conceptual framework used in developing the Program Plan. Section II deals specifically with the Pump Test Program, and Section III deals specifically with the Valve Test Program.

Sections II and III are formatted in a manner to aid review. Each section summarizes the basis and concepts used to formulate the Pump and Valve Testing Program. Pump testing requirements are summarized in a single Pump Test Table attached to Section II. Valve test requirements are summarized in Valve Test Tables attached to Section III. The Valve Test Tables are arranged into separate attachments for each system. Where quarterly testing has

been found to be impractical, a justification for delay of test to cold shutdown, a Generic Letter 89-04 justification or a relief request, is provided following the appropriate Pump or Valve Test Tables.

I.7 DEFINITIONS

The terms below, when used in the Inservice Testing Program, are defined as follows:

Quarterly:	An interval of 92 days for testing components which can be tested during normal plant operation.
Cold Shutdown:	Testing delayed until cold shutdown will commence as soon as cold shutdown condition is achieved, but no later than 48 hours after achieving cold shutdown. Testing will continue until all tests are complete or the plant is ready to return to power. Completion of testing is not a prerequisite to return to power, and any testing not completed at one cold shutdown will be performed during subsequent cold shutdowns before the refueling outage. No cold shutdown testing will be performed on any components tested less than 92 days prior to achieving cold shutdown. The 48-hour interval will not hold for planned cold shutdowns where all required testing will be completed. In addition, all components which have testing delayed to cold shutdown will be tested during each refueling unless the component has been tested during the previous three months. Cold Shutdown testing includes testing performed during Plant Operating Modes between Normal Operation and Technical Specification defined Cold Shutdown conditions.
Refueling:	Testing delayed to refueling will be performed during the normal scheduled refueling shutdown before returning to power operation. Refueling testing includes testing performed during plant operating modes between normal and Technical Specification defined refueling conditions.
Period:	Category C safety and relief valves (IWV-3511), Category D explosive actuated valves (IWV-3610), and Category D rupture

	disks (IWV-3620) are periodically tested, as defined in the appropriate Code sections.
Pressure Isolation:	Valves which act as an isolation boundary between the high-pressure reactor coolant system and a system having a lower operating or design pressure, and designated as pressure isolation valves in Table 3.4-2 of the plant Technical Specifications.
Containment Isolation:	Any valve which performs a containment isolation function and is included in the Appendix J, Type C, local leak rate test program.
Active:	Any valve which is required to change position to accomplish its safety-related functions. All valves not designated as passive (PAS) on the valve test tables are considered to be active valves.
Passive:	Any valve which is not required to change position to accomplish a specific function and for which the Code does not require operability testing.

PUMP AND VALVE INSERVICE TESTING PROGRAM

FOR

DAVIS-BESSE NUCLEAR POWER STATION

SECTION II

PUMP IST PROGRAM

PUMP IST PROGRAM

II.1 INTRODUCTION

This section presents the program for inservice testing (IST) of safety related pumps at the Davis-Besse Nuclear Power Station, in compliance with the requirements of 10 CFR 50.55a. This program has been prepared to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Subsection IWP, 1986 Edition for ASME Class 1, 2, and 3 pumps that are required to perform a specific function in shutting down a reactor or in mitigating the consequences of an accident, and that are provided with an emergency power source.

II.2 Concept

The pump test program has been developed to detect and monitor safety-related pump degradation. The Program addresses all pumps that are required to perform a specific function in shutting down a reactor or in mitigating the consequences of an accident, and that are provided with an emergency power source. This program specifies either Section XI or alternative testing, as appropriate, for all pumps that perform a safety-related function.

Pumps have been selected for inclusion in the test program based on a review of all plant systems. This review identified those systems performing safety-related functions. Each safety-related system was then analyzed to determine which pumps are essential to the safety-related operation of the system and if they are powered from an emergency power source. All pumps that fit these criteria were analyzed to determine whether Section XI testing can be performed on a quarterly basis and if all required test parameters could be measured in compliance with the Code. Where it was determined that a delay of test is required or Code test requirements could not be implemented either a Generic Letter 89-04 justification or a relief request is provided following the pump test tables.

II.3 Code Interpretations

A number of items in Subsection IWP of the Code are subject to interpretation. The interpretations of a number of general items encountered in preparing the pump test program are provided below:

II.3.1 Pump Test Data Analysis - Required Action Range

IWP-6000 requires that the measured and observed quantities, limits and acceptance criteria be included in the test procedure. This data will be used following completion of pump testing to

determine if the test data is within the Required Action Range of Table IWP-3100-2. When the data is determined to be within the required action range, the effect on Technical Specification operability of the pump will be assessed and any applicable Technical Specification Action statement time starts. If required due to repair or replacement, then new reference value shall be determined. New reference values shall be documentation in the Pump and Valve Basis Document.

II.3.2 Pump Retests to Verify Operability

If pump test data fall in the Required Action Range and the pump has been declared inoperable under any applicable Technical Specification Action Statement, the provision of IWP-3230(d) may be applied. As an alternative to repair or replacement the test instruments may be recalibrated and the test rerun. If the pump passes the retest it will be declared operable. If the pump fails the retest the pump remains inoperable and the Technical Specification Action Statement requirements remain in effect.

II.3.3 NRC Information Notices & Bulletins

NRC issued Information Notices and Bulletins relating to pumps were reviewed and incorporated, as applicable.

II.4 Generic Letter 89-04 Justification

NRC Generic Letter 89-04 provides approval of several ASME Code alternative test requirements providing the Pump and Valve programs are consistent with the positions taken in Attachment 1 of the Generic Letter. The Generic Letter states that these preapproved alternatives to the Code should be identified for each applicable pump in the pump test program. This program identifies these pumps by referencing Generic Letter 89-04 justifications. These justifications provide the basis for the need to use the Generic Letter alternative testing and reference the applicable Generic Letter approved alternative.

II.5 Pump Program Relief Requests

Where Code specified test requirements cannot be met or testing must be delayed to cold shutdown or refueling outages the NRC requires that a relief request be provided.

This program provides a relief request for each pump test requirements found to be impractical and/or testing delayed

to cold shutdown or refueling outages.

II.6 Pump Test Records

A system of records for pump inservice testing will be maintained at the site in accordance with IWP-6000 of Section XI.

II.7 GENERAL RELIEF REQUESTS FOR PUMPS

This section requests relief from specific requirements of Section XI found to be impractical for this site. Since they are general in nature and pertain to a number of components, this section requests general relief as presented below.

General Relief Request: None

II.8 PUMP LIST

Pumps included in this program are as follows:

ASME Class 1, 2, and 3 Pumps

System	P&ID Drawing No.	No. of Pumps
Service Water	M-041 A	3
Auxiliary Feedwater	M-006 D	2
Makeup	M-031 C	2
Boric Acid Transfer	M-045 C	2
Decay Heat	M-033 B, C	2
Component Cooling Water	M-036 A	3
Containment Spray	M-034	2
High Pressure Injection	M-033 A	2
D. G. Fuel Oil Transfer	M-017 A	2

II.9 PUMP TEST TABLE NOMENCLATURE

The following abbreviations have been used in the Pump Test Tables:

Legend for Headings

Pump I.D. Number	- Unique pump identification number
ASME Class	- Classification as determined for Section XI
Drawing Number & COORD.	- Piping and Instrumentation drawing number and location on drawing where pump is shown.
Relief Request	- Applicable relief request numbers are indicated with a "RP" prefix.
Reference Notes	- Notes are located following the last Pump Test Table.

Legend for Pump Parameters

Pi - Inlet pressure (psig) or tank level (feet)
Po - Outlet pressure (psig)
dP - Differential pressure dP = Po - Pi (psid)
Q - Flow rate (gpm)
Vd - Vibration Displacement (mil)
Vv - Vibration Velocity (inch/sec)
N - Speed (rpm)
L - Lubricant level or pressure
RP - Pump relief request

Legend for Frequency of Test

Q - Quarterly
CS - Cold Shutdown
R - Refueling
NA - Not Applicable
- - Test deleted, See Relief Request

PUMP AND VALVE INSERVICE TESTING PROGRAM

FOR

DAVIS-BESSE NUCLEAR POWER STATION

SECTION II

ATTACHMENT 1: PUMP TEST TABLE AND RELIEF REQUESTS

FOR

SAFETY-RELATED

PUMPS

PUMP TEST TABLE NOTES

ASME Class 1, 2, and 3

The Pump Test List identifies the test parameters to be measured or observed, and the test frequencies. Notes 1 through 6 refer to amplifications of the Code requirements and are further discussed below:

1. On a pump with constant speed drive, speed is not measured, since the test will be performed at nominal motor nameplate speed, as required by Section XI, IWP-3100.

2. Inlet pressure is to be calculated from the inlet liquid level.

3. Bearing temperature measurement is not required (IWP-4310), since bearings are in the pump fluid flow path, such that they are completely immersed in and lubricated by the pumped fluid.

4. Pump lubricant level or pressure is not observed because of bearing lubrication design. Pump motor lubrication is observed in lieu of pump lubricant level or pressure.

5. Flow rate will be measured by measuring increase in day tank level versus time when the transfer pumps are in operation.

6. Neither pump nor motor lubricant level, pressure, or bearing temperatures can be observed since the pump and motor contain sealed bearings such that they are completely immersed in the fluid being pumped. Bearing temperature measurement is not required (IWP-4310).

7. Neither pump nor motor lubricant level, pressure, or bearing temperatures can be observed since the pump and motor contain sealed bearings. Bearing temperature measurement is not required (IWP-4310).

PUMP RELIEF REQUEST

RP-1

PUMPS: All pumps except the Service Water and DG Fuel Oil Transfer.

CLASS: 2 and 3

TEST REQUIREMENTS: IWP-3000 requires a bearing temperature measurement at least once a year.

BASIS FOR RELIEF: The once-a-year temperature measurement will not provide significant information about pump conditions. Industry experience has shown that bearing temperature changes caused by degrading bearings occur only after major degradation has occurred at the pump. Prior to this, the vibration measurement would provide the necessary information to warn the operator of an impending malfunction. The long running time required to achieve temperature stability could result in increased maintenance and repair. Deletion of this measurement will not have significant effect on evaluating pump test results since other required test parameters are being measured.

ALTERNATE TESTING: Pump differential pressure, flow, and vibration (as applicable) will be used to monitor pump performance.

PUMP RELIEF REQUEST

RP-2

SYSTEM: Service Water

PUMP: P3-1, P3-2, P3-3

CLASS: 3

FUNCTION: Provide Cooling Water to Safety-Related Equipment.

TEST REQUIREMENTS: IWP-3100-2 specifies acceptable, alert, and required action ranges for pump head versus flow rate testing.

BASIS FOR RELIEF: Due to climatic conditions the service water system experiences a wide variation in water temperature. The system flow instrumentation is not designed to compensate for temperature variations. Because of the variation of water temperature, the use of the Code required acceptable, alert, and required action ranges of Table IWP-3100-2 could result in unnecessary pump maintenance and repair.

Alert and required action levels will be defined as the function of differential pressure data points with Ranges For Test Parameters, Table 5.2-2b, ASME OM CODE-1990. ASME OM 1990 Code limits are more restrictive than code limits of 1986, Section XI, IWP 3100-2. Table 5.2-2b has no required alert level for high differential pressure. These higher values reflect a general consensus that test failures resulting from higher reference value are hydraulic measurements caused by instrument fluctuations. Pump hydraulic performance is not expected to improve, hence high alert or high required action levels are ineffectual in predicting pump degradation. However the high required action level is given to ensure instrumentation problems will be resolved. Lower alert level and low required action are more conservative than 1986 ASME Code, Section XI, hence this will ensure a more conservative acceptance criteria preventing any degradation of overall pump performance from being masked.

ALTERNATE TESTING: Alert levels and required action levels shall be defined per ASME OM-1990 Code, Section ISTB 5.2 and Table ISTB 5.2-2b, Ranges For Test Parameters.

PUMP RELIEF REQUEST

RP-3

SYSTEM: Service Water

PUMP: P3-1, P3-2, P3-3

CLASS: 3

FUNCTION: Provide cooling water to safety-related equipment.

TEST REQUIREMENT: IWP-4500 specifies measuring displacement vibration amplitude at a pump bearing housing or its structural support, provided the pump is not separated from its support by a resilient mounting.

BASIS FOR RELIEF:

These pumps are submerged in a pit, being vertically mounted, wet pit, turbine-type, centrifugal pumps. They are inaccessible for measuring vibration amplitude at the pump bearing.

Vibration monitoring is required by measurement of a specific displacement parameter for each pump in the program as defined per ASME, 1986 Edition, Section XI. The industry consensus among manufacturers of vibration monitoring equipment is that vibration velocity, rather than displacement, is a more useful indicator for evaluating degradation in pumps whose speed exceeds 600 rpm. These pumps operate at approximately 1200 rpm. Additionally, the ASME OM-1990 Code recognizes that for this type of pump, vibration measurements taken at the upper motor bearing housing provide the best data. Such measurements shall be taken in three orthogonal directions, one of which is parallel to the shaft.

ALTERNATE TESTING: The vibration velocity shall be evaluated at the upper motor bearing housing. Alert levels and required action levels shall be defined per ASME OM-1990 Code, Section ISTB 4.6.4(b) and Table ISTB 5.2-2(a), Ranges for Test Parameters. These test parameters are more conservative than ASME 1986 Code, hence an acceptable level of quality and safety is still demonstrated.

PUMP RELIEF REQUEST

RP-4

SYSTEM: Service Water

PUMP: P3-1, P3-2, P3-3

CLASS: 3

FUNCTION: Provide cooling water to safety-related equipment.

TEST REQUIREMENT: IWP-3100 requires that each measured test quantity be compared to the reference value of the same quantity. Any deviations determined shall be compared to the limits given in Table IWP-3100-2.

BASIS FOR RELIEF: This system does not have installed pump test lines and system operating conditions will not allow adjusting system resistance without significant impact on plant operations. These are variable resistance systems that are in continuous operation during all modes of plant operation. Depending on plant operating conditions and climatic conditions, the cooling requirements range from minimum cooling loads to 100 percent with many of the loads automatically placed in operation in response to local temperature requirements. Because of these normal operating requirements, it is not possible to specify a reference test flow path or flow rate that can be repeated for each test.

ALTERNATE TESTING: Pump performance curves, giving reference values for vibration and differential pressure as functions of flow, have been established between 6000 gpm and 10500 gpm. These ranges reflect normal and accident conditions. Measurements of vibration and differential pressure at six flow data points were obtained for each pump, then plotted to compile the pump performance reference value curves. Then the parameter alert levels and required action levels as defined per Pump Relief Request RP-2 and Relief Request RP-3 were superimposed. These curves serve as the basis for required action to ensure pump degradation is identified. During pump testing the flow shall be established within the domain of the reference curve, then vibration and differential pressure shall be measured and recorded. Pump performance will be considered

acceptable if parameter values fall within the regions bounded by the defined alert and action level curves, rather than a specific value.

When the demand for service water is low, actual test flow may be increased. In the event that plant conditions do not allow increasing service water flowrates above 6000 gpm, then pump performance shall be evaluated against the manufacturer's pump curve, based upon ASME OM-1990 Code, Table 5.2-2(b), Ranges for Test Parameters. Flow rate measurements in the 6000 to 10500 gpm range have validated the manufacturer's pump curves in that range. It is therefore expected the manufacture's pump curves would be valid at lower flow rates. Vibration shall be evaluated using the lowest flow data point on the vibration velocity reference curve described above.

These curves will serve as the basis for alert and required actions to ensure pump degradation is identified.

PUMP RELIEF REQUEST

RP-5

SYSTEM: Diesel Fuel Oil Transfer

PUMP: P195-1, P195-2

CLASS: 3

FUNCTION: Transfer diesel fuel oil from the Emergency Diesel Generator (EDG) Fuel Oil Storage Tanks to the EDG Day tanks.

TEST REQUIREMENT: Measure pump test inlet pressure, differential pressure and flow rate in accordance with the requirements of IWP-3100 and pump test duration requirements of IWP-3500.

BASIS FOR RELIEF: The diesel fuel oil transfer pump discharge plenum is bolted to the manhole cover on top of the EDG Fuel Storage Tank, being submerged inside the tank. These pumps are low flow, rated at 10 gpm. They automatically start on low EDG Day Tank level of seven feet, approximately 5050 gallons, then automatically shut off at seven and one-half feet, this corresponds to approximately 250 gallons pumped. This safety feature maintains a minimum level as required per Technical Specification 3.8.1. An EDG Fuel Oil Storage Tank has a capacity of approximately 40,000 gallons. The EDG Day Tanks have a capacity of 6000 gallons.

EDG Day tank can be cross connected to each other, this allows one EDG transfer pump to serve both diesels. Each EDG Day tank has the capability of emergency fill from the 100,000 gallon fuel oil storage tank.

EDG fuel design flow is 4.5 gpm, therefore each day tank can last approximately 22 hours. This time period is sufficient to allow offsite fuel oil delivery service directly to the day tanks.

None of the pumps have installed instrumentation to measure either flow or discharge pressure. Discharge pressure cannot be varied, e.g., there are no isolation valves. The only possible flow measurement is by measuring EDG Day Tank volume over time. Error in measuring this volume is dependent on fuel oil temperature and a limited change in level indication because the EDG Day

Tank has an large upper circular section. Flow rate is dependent upon EDG Fuel Oil Storage Tank level and fuel oil viscosity which varies with environmental temperature conditions. There are no recirculation nor designed drainage pathway.

To date no maintenance has been required for these canned rotor pumps. Pumps have successfully started and delivered fuel oil upon demand. The latest flow test indicates pump design flowrates are being met.

To perform Section XI testing would require extensive plant modifications. Performance of ASME Section XI testing requirements without major modification to plant structure is impractical.

ALTERNATE TESTING: Pump flow functional test is performed each month as required per Technical Specification 4.8.1.1.2. Pumps are observed to start with a corresponding increase level in the EDG Day Tank.

Pump flow rate tests are performed each refueling. A predetermined oil level above the transfer pump will be set. Flow rate is obtained by measuring a change in EDG Day Tank level over time. A EDG Day Tank level change of approximately 150 gallons or more shall be timed to determine flow rate.

There are no means of obtaining differential pressure, nor the ability to throttle flow. Flow rate will be calculated from a known increase in EDG Day Tank level. Pump suction pressure shall be preset by fuel oil level adjustment. Pump discharge is consistent since there are no throttle valves. Based upon these conditions pump flow rates should be repeatable and capable of predicting pump degradation.

A low required action range of less than 6 gpm will be used in lieu Table 3100-2. Based upon engineering judgment the developed range in lieu of Table 3100-2 is required because of error from fuel temperature viscosities, error in EDG Fuel Oil Storage Tank level measurement, and error in EDG Day Tank measurement. This range will ensure EDG transfer pumps do not degrade below required design system flow requirements. Pump flow rates will be trended for degradation.

No alert levels shall be specified since this is a refueling test, hence required action will be preformed if pump flow rate is determined to be outside the acceptable range.

Periodically, the EDG Fuel Oil Storage Tank are drained, cleaned, and filled with fresh oil. The EDG Day Tank are also drained, cleaned and inspected. At those times a long term pump duration test is possible. The transfer pump will be required to consecutively pump 1000 gallons of fuel from the Emergency Diesel Generator Fuel Oil Storage Tank to the EDG Day Tank. Flow rate will be measured and evaluated for degradation.

PUMP RELIEF REQUEST

RP-6

SYSTEM:	Diesel Generator Fuel Oil Transfer
PUMP:	P195-1, P195-2
CLASS:	3
FUNCTION:	Transfer diesel fuel oil from the Emergency Diesel Generator (EDG) Fuel Oil Storage tanks to the EDG Day Tank.
TEST REQUIREMENT:	Measure pump vibration in accordance with IWP-3100.
BASIS FOR RELIEF:	The Diesel Fuel Oil Transfer Pumps are submersible motor driven, canned, centrifugal pumps. Both the pump and motor are submersed in an underground tank and are not accessible for vibration measurements.
ALTERNATE TESTING:	Pump flow rate will be monitored and trended as defined per pump relief request RP-5.

PUMP RELIEF REQUEST

RP-7

PUMPS: All Pumps

CLASS: 2 and 3

TEST REQUIREMENTS: ASME, 1986 Edition, Section XI, Table IWP-3100-2 requires measurement of displacement for the vibration test quantities.

BASIS FOR RELIEF: Vibration is determined by measurement of a specific displacement parameter for each pump in the program as defined per ASME, 1986 Edition, Section XI. Above 600 rpm, displacement has been determined as a poor indicator of pump performance. All inservice test program pumps are centrifugal type with motor speed greater than 600 rpms. Presently in some pumps displacement readings are not repeatable. Therefore for vibration the velocity quantities shall be evaluated in lieu of displacement quantities.

ASME OM-1990 Code, Section ISTB 4.6.4 and ISTB Table 5.2-2a requires more than one vibration point to monitor, hence more test data is required. Therefore an acceptable level of quality and safety is still present.

ALTERNATE TESTING: If an engineering evaluation indicates that velocity is a more appropriate indicator for pump degradation, then velocity shall be used in lieu of displacement.

These velocity quantities shall meet the alert levels and required action levels as defined per ASME OM-1990 Code, Section ISTB 4.6.4 and Table ISTB 5.2-2a, Ranges For Test Parameters.

PUMP TEST TABLE

DAVIS-BESSE NUCLEAR POWER PLANT

DOCUMENT REVISION: 1

PUMP LIST						MEASURED PARAMETERS							
SYSTEM	PUMP NUMBER	P&ID NO.	COORD.	CLASS	RELIEF REQUEST	SPEED N	INLET PRESS. Pi	DIF. PRESS. dP	FLOW Q	VIBRATION V	TEMP. T	LUBE. LEVEL L	CHG
SERVICE WATER	P3-1	M-041A	G-2	3	RP-2,3,4	(1)	Q(2)	Q	Q	Q	(3)	(4)	0
	P3-2	M-041A	G-5			(1)	Q(2)	Q	Q	Q	(3)	(4)	0
	P3-3	M-041A	G-9			(1)	Q(2)	Q	Q	Q	(3)	(4)	0
AUXILIARY WATER	P14-1	M-006D	G-9	3	RP-1	Q	Q	Q	Q	Q	--	Q	0
	P14-2	M-006D	J-6			Q	Q	Q	Q	Q	--	Q	0 0
MAKEUP	P37-1	M-031C	E-8	3	RP-1	(1)	Q	Q	Q	Q	--	Q	0
	P37-2	M-031C	H-9			(1)	Q	Q	Q	Q	--	Q	0 0
BORIC ACID TRANSFER	P38-1	M-045	J-4	3	RP-1,7	(1)	Q(2)	Q	Q	Q	--	(7)	0
	P38-2	M-045	K-3			(1)	Q(2)	Q	Q	Q	--	(7)	0 0
DECAY HEAT REMOVAL	P42-1	M-033B	G-9	2	RP-1	(1)	Q	Q	Q	Q	--	Q	0
	P42-2	M-033C	F-8			(1)	Q	Q	Q	Q	--	Q	0 0
COMPONENT COOLING WATER	P43-1	M-036A	D-4	3	RP-1	(1)	Q	Q	Q	Q	--	Q	0
	P43-2	M-036A	J-4			(1)	Q	Q	Q	[illegible]	--	Q	0
	P43-3	M-036A	G-4			(1)	Q	Q	Q	[illegible]		Q	0
CONTAINMENT SPRAY	P56-1	M-034	D-10	2	RP-1	(1)	Q	Q	Q	Q	--	Q	0
	P56-2	M-034	B-10			(1)	Q	Q	Q	Q	--	Q	0 0
HIGH PRESSURE INJECTION	P58-1	M-033A	H-7	2	RP-1	(1)	Q	Q	Q	Q	--	Q	0
	P58-2	M-033A	E-7			(1)	Q	Q	Q	Q	--	Q	0 0
DG FUEL OIL TRANSFER	P195-1	M-017A	C-4	3	RP-5,6	(1)	--	--	Q(5)	--	(6)	--	0
	P195-2	M-017A	C-7			(1)	--	--	Q(5)	--	(6)	--	0 0

PUMP AND VALVE INSERVICE TESTING PROGRAM

FOR

DAVIS-BESSE NUCLEAR POWER STATION

SECTION III

VALVE IST PROGRAM

III. VALVE IST PROGRAM

III.1 INTRODUCTION

This section presents the program for inservice testing of valves at the Davis-Besse Nuclear Power Station, in compliance with the requirements of 10 CFR 50.55a. This program has been prepared to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Subsection IWV, 1986 Edition for safety-related valves which are required to perform a specific function in shutting down a reactor to the cold shutdown condition or in mitigating the consequences of an accident or in providing overpressure protection.

III.2 Concept

The valve test program has been developed to verify the operability of safety-related systems. The program addresses those valves whose operability and/or position are essential to safety-related system operation and Section XI valve testing will be performed to verify valve operability. The program specifies either Section XI or alternate testing, as appropriate, for those valves which perform a safety related function.

Valves have been selected for inclusion in the test program based on a review of all plant systems. This review identified those systems performing safety-related functions. Each safety-related system was analyzed to determine which valves are essential to the safety-related operation of the system. These valves were then investigated to determine whether Section XI testing could be performed during normal operation. Those valves for which quarterly testing was determined to be inappropriate were analyzed further to determine if cold shutdown testing was possible.

The ASME code allows a delay in testing until cold shutdown for those valves that are not practical to operate during plant operation. If cold shutdown testing was determined to be possible then justifications for delay of tests to cold shutdown are provided following the appropriate valve test tables. Where it is not practical to comply with Code requirements, a review of Attachment 1 to NRC Generic Letter 89-04 has been performed. If the component can be tested consistent with the positions taken in Attachment 1, justifications describing the need to perform the preapproved alternate testing are provided following the appropriate valve test tables. Relief requests describing appropriate alternative testing,

and justifying exclusion from Section XI testing for valves which cannot be tested quarterly or during cold shutdown and which are not specifically preapproved by Attachment 1 to NRC Generic Letter 89-04 are provided following the appropriate valve test tables.

III.3 Code Interpretations

A number of items in Subsection IWV of the Code are subject to interpretation. The interpretations of a number of general items encountered in preparing the Valve Test Program are provided below:

III.3.1 Relief Valves

The code requires testing of pressure relief valves in accordance with ASME/ANSI OM-1-1981. The relief valves designated for test are only those which perform a system pressure relief function. Thermal relief valves, whose only function is to protect components or piping from thermal expansion are not considered to be safety-related and are not addressed in the program. Where a relief valve performs both a system and a thermal relief function it has been included in the program. Thermal relief valves which also perform a containment isolation function are included in the program for Appendix J, Type C, testing only.

III.3.2 Passive Valves

The Code excludes valves used only for operating convenience and/or maintenance from testing. Also, the Code defines passive valves but specifies no operability test requirements. This program defines as passive any manual or power operated valve that does not have to change position, but that does perform either a containment isolation or pressure isolation function. Passive containment and pressure isolation valves have been included for seat leak testing only. All valves not designated as passive are considered to be active valves.

III.3.3 System Test Valves

Valves included in a system to align the system for testing are included for Section XI testing if their position is critical to safety-related system operation. The system analysis postulates that the system

is aligned to a test mode configuration when the actuation signal occurs. All valve , including those used only for testing, w ch must respond to the actuation signal, are included in the test program.

III.3. Pressure and Flow Control Valves

The Code excludes valves which perform pressure or flow control functions. This program excludes them unless they also perform a system safety-related response function, such as automatic closure on system actuation. The program addresses these valves by specifying testing of the safety-related function and excluding the normal pressure or flow control functions.

III.3.5 Automatic Power Operated Valves

Power-operated valves which receive an automatic signal on system actuation are included in the program. These valves may be included as passive valves, if appropriate.

III.3.6 Remote Power Operated Valves

The program includes power operated valves activated by remote switches if they are required to change position to align a system for safety-related operation, terminate safety-related system operation, or provide containment isolation capability for mitigating the consequences of an accident.

III.3.7 Normal vs. Safety-Related System Operation

Valves in systems which have both normal and safety-related operating modes are included in the program, only if they perform a safety-related function. Valves which provide normal system operation control and whose position has no effect on safety-related operation are excluded from the program.

III.3.8 Dual-Function Valves

Valves which provide more than one function are tested for their safety-related function only. Valves with multiple safety-related functions are tested for each function. An

example is the Pilot Operated Relief Valve, (PORV) that open and close in response to either an automatic or remote manual signal, and also act as relief valves. Both are safety-related functions, and testing for both functions is included in the program.

III.3.9 Simple Check Valves

Simple check valves are tested to verify operability in the safety-related flow direction(s). Normally closed simple check valves which must open are tested to verify full opening with forward flow. Normally open simple check valves which must close on loss of flow are tested to verify closure on loss of forward flow. Normally closed simple check valves which remain closed on system actuations are tested to verify that the valves are closed. Normally open simple check valves which are required to remain open are tested to verify full-flow in the forward direction. Simple check valves which are required to cycle open and closed are tested to verify full opening with forward flow and closure on loss of forward flow. This interpretation is consistent with Items 1 and 3 of Attachment 1 to NRC Generic Letter 89-04. A check valve's full stroke open position may be verified by passing the design flow rate through the valve. A check valve reverse flow is tested in a manner that proves the disk travels to the seat promptly on cessation or reversal of flow.

Full forward flow or reverse flow can be verified by showing for a measured flow or other appropriate system parameters through the valve is such that the valve could only be fully open or closed. Full forward flow can be verified by using a mechanical exerciser which can be observed to move through a full stroke. Reverse flow can be verified by using a mechanical exerciser which can be observed to move through a partial movement or the disk travel to the valve seat.

Full forward flow or reverse can be verified by partial disassembly of the valve and manually moving the disk through a full stroke. Following partial disassembly test

a full or partial forward flow verification test will occur.

III.3.10 Manual Stop Check Valves

Manual stop check valves are tested to verify operability in the safety-related flow direction(s). If the manual operator is withdrawn, the valve operates as a simple check in the forward flow direction and is tested as a simple check. Reverse flow closure is verified as a simple check, if possible, or by use of the manual operator.

III.3.11 Testable Check Valves

Check valves equipped with a manual exerciser will be tested as a simple check or by exercising using the manual exercising device. Check valves equipped with a power operator installed for the sole purpose of exercising the valve to verify operability will be tested as a simple check or by use of the power operator.

III.3.12 Power Operated Stop Check Valves

Power operated stop check valve testing is based on the function of the operator. If the valve operator is always withdrawn and the valve operates as a simple check valve, except during maintenance, the valve is tested as a simple check. If the operator is normally withdrawn such that the valve operates as a simple check in the forward direction and the operator provides positive closure, it is tested as a simple check in the forward direction and exercised closed using the operator. In addition to exercising, the operator will be timed and failed as appropriate.

III.3.13 Pump Discharge Check Valves

As a minimum, pump discharge check valves will be forward flow exercised. In addition, reverse flow closure will be verified when failure of the valve to close could result in a substantial reduction of system flow. Such a potential exists with parallel pumps connected to common suction and discharge headers. If the check valve on the idle pump fails to close a

significant amount of system flow could be diverted back through the idle pump to the suction header.

III.3.14 Check Valve Full/Partial Stroke

In some cases, full design flow through a check valve requires less than full mechanical valve movement. As used in this program, the ter full-stroke refers to either the ability of the valve to pass design flow rate or full mechanical stroking. Forward flow full-stroke operability testing will be by any method that verifies the valve capable of passing design flow or full mechanical stroking. Any test that verifies less than full design flow capability or full mechanical stroking is considered as a partial-stroke test. This interpretation is consistent with item 1 of Attachment 1 to NRC Generic Letter 89-04.

III.3.15 Category AC (Containment Isolation Valve) Leak Testing

All valves specified for Appendix J, Type C, local leak rate testing are included in the Program as Category A and C valves. Appendix J, Type C, local leak rate testing fulfills the intent of Articles IWV-3420 through IWV-3425 and will be performed in lieu of Section XI testing. Analysis of leakage rates and corrective action requirements of IWV-3426 and IWV-3427(a) will be performed. Compliance to IWV-3427(b) is impractical and not required for Appendix J testing as established in Generic Letter 89-04, Attachment 1. The Program reflects the current list of valves receiving Appendix J, Type C, testing. Any future change to that list will be incorporated into the Program. This interpretation has been preapproved by Item 10 of Attachment 1 to NRC Generic Letter 89-04.

III.3.16 Category AC (Pressure Isolation) Valve Operability Testing

Reactor coolant system pressure isolation valves will be demonstrated operable in accordance with plant Technical Specifications 4.4.6.2.2 in lieu of the

requirements of IWV-3420 as follows:

Each reactor coolant system pressure isolation valve specified in Table 3.4-2 shall be demonstrated operable pursuant to Specification 4.0.5, except that in lieu of any leakage testing required by Specification 4.0.5, each valve shall be demonstrated operable by verifying leakage to be within the allowable leakage criteria of 1.0 gal/min with an upper limit of the maximum allowable leakage in Table 3.4-2; and the measured leak rate for a given test cannot reduce the difference between the results of the previous test and the maximum allowable leakage specified in Table 3.4.2 by more than 50 percent:

a. After each refueling outage.

b. Whenever the plant has been in COLD SHUTDOWN for 72 hours, or more, and if leakage testing has not been performed in the previous 9 months, and

c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve.

Per the Reactor Safety Study, WASH 1400 Event V Considerations, CF30, CF31, DH76, and DH77 will be leak tested prior to Reactor Startup if forward flow through these valves was identified. Any change to the list of pressure isolation valves referred to in Technical Specifications will automatically be incorporated into the program. This interpretation is consistent with Item 4 of Attachment 1 to NRC Generic Letter 89-04.

III.3.17 Locked Valves

This program classifies as locked valves only those which are physically restrained from movement (i.e., chain and padlock), or sealed (i.e., wire and seal) in position at the local hand switch and/or hand wheel. Remote hand indicator switches, located in the control room, can cycle these locked valves under administrative controls.

III.3.18 Valve Position Indicator Verification

IWV-3300 requires that all valves with remote position indicators shall be observed at least once every two years to verify that valve operation is accurately indicated. It is the intent of this program that such verification will be performed on all valves which have remote position indicators.

III.3.19 Valve Stroke Direction

Valves will be stroked and timed in their safety-related directions(s). For example, a motor-operated valve whose safety-related operation is to close on system actuation will be exercised and timed closed. If the valve must operate in both directions for safety-related system operations, it will be exercised and timed in both directions.

III.3.20 Valve Fail-Safe Directions

Valves will be tested to verify operability of the fail-safe operator in the direction that the valve travels to perform its safety-related function. Valves equipped with fail-safe operators for convenience only and which do not have to change position on loss of power for adequate safety-related operation will not be fail-safe tested.

III.3.21 Temperature Interlocked Valves

Valves which open and close in response to local temperature controls will not be tested unless they are interlocked to system operation. For example, temperature interlocked valves on local area heat exchangers will not be tested unless they are interlocked to go open/closed on system actuation for safety-related operation.

III.3.22 Containment Entry

Entry into the containment structure during normal operation or cold shutdown is strictly regulated by plant operating procedures. Because of environmental and As-Low-As-Reasonably-Achievable (ALARA) considerations, entry is made only for tasks that are absolutely necessary for plant operation, and duration inside the containment is limited to as-short-as-possible. Because of this, valve testing

that would require entry into containment to perform special testing is limited to only those absolutely essential for safe plant operation and all others are delayed until refueling.

III.3.23 Pump Seal, Cooling, and Lubrication Valves

Valves in pump seal water, cooling water and lubrication lines which are an integral part of the pump design and which are effectively verified operable during pump operation or testing are not addressed in the program. Acceptable pump operation or testing verifies adequate operability of pump seal, cooling and lubrication path valves.

III.3.24 Pressurizer Power Operated Relief Valve (PORV) Block Valve

The pressurizer PORV block valves will be operability tested quarterly to Code Requirements.

III.3.25 Rapid-Acting Valve Stroke Timing

Power operated valves with normal stroke times of two seconds or less are defined as Rapid-Acting valves. These valves will have a maximum limiting value of full-stroke time of two seconds. Any measured full-stroke time of two seconds or less verifies operability. If the measured valve full-stroke time exceeds two seconds the valve is declared inoperable and corrective action is taken in accordance with IWV-3417(b). This interpretation has been preapproved by Item 6 of Attachment 1 to NRC Generic Letter 89-04.

III.3.26 Power Operated Valve Limiting Values of Full-Stroke Time

For power operated valves the Code requires that (a) Limiting values of full-stroke times shall be specified (IWV-3413(a)), (b) Valve stroke times shall be measured to (at least) the nearest second (IWV-3413(b)) and (c) If the stroke time increases by 50% or more from the previous test, then the test frequency shall be increased to once each month until corrective action is taken (IWV-3417(a)). Paragraph IWV-3417(b) specifies corrective actions that must be taken. With

reference to (c) above, measuring changes in stroke times from a reference value as opposed to measuring changes from the previous test is an acceptable alternative. (Reference: NRC Generic Letter No. 89-04 - April 3, 1989).

The purpose of limiting values of full-stroke time is to establish a value for taking action on a degraded valve before the valve reaches the point where there is a high probability of valve failure due to valve degradation. The limiting value of full-stroke time for each valve is based on a reference value of full-stroke time for each valve when it is known to be in good mechanical condition and operating acceptable. The reference value can be a single measurement or, better still, the average of a number of measurements. The limiting value shall be a reasonable deviation from the reference value.

Neither the Code nor the NRC have provided any specific requirements or guidelines for establishing an appropriate deviation, except that the limiting value of full-stroke time be a reasonable value and based on each valve size, and the actuator type.

Toledo Edison is adopting component oriented maximum valve stroke times for these valves based upon the criteria below:

a. Motor-operated valves will be limited to 1.5 times baseline.

b. Air-operated valves with a stroke time baseline less than 10 seconds will be limited to 3.0 times baseline.

c. Air-operated valves with a ten second or greater baseline will be limited to twice baseline.

After the limiting values of stroke times have been established they will be compared to Technical Specifications and Updated Safety Analysis Report (USAR) values. Where the limiting values are less than those of Technical Specifications, they will be used. If Technical Specification or USAR maximums are less than the calculated values, the Technical Specification or USAR maximum will

be used. In no case will the limiting value of full-stroke time be greater than Technical Specification or USAR stroke times. This interpretation is consistent with Item 5 of Attachment 1 to NRC Generic Letter 89-04.

III.3.27 Submittal of Limiting Values of Stroke Time

The NRC requires that limiting values of power operated valve stroke times be included in the program submittal. Because of repair, maintenance, modification, etc. limiting values of stroke time will change. If limiting values are included in the program and the program is approved by the NRC, any subsequent change to limiting stroke times would require a program revision. In order to avoid unnecessary program revision for Code allowed changes to limiting values of stroke time, a listing of limiting values of stroke times has been prepared. If required due to repair or replacement, then new reference value shall be determined. New reference values shall be documentation in the Pump and Valve Basis Document.

III.3.28 Pump Minimum Flow Line Block Valves

Stroke testing of pump minimum flow line block valves depends on valve usage and configuration. Normally open motor operated line block valves that are not required to close (i.e., remain open for all modes of operation) are passive and are excluded from testing. Normally open individual minimum flow line power operated block valves which are normally closed and open on pump start or normally open and are required to close shall be stroke tested quarterly. If the individual minimum flow lines tie into a single discharge line with a normally open power operated valve, such that failure of the valve in the closed position could stop minimum flow from all pumps, valve stroke testing will be delayed.

III.3.29 Check Valve Disassembly

Item 2 of Attachment 1 to NRC Generic Letter 89-04 preapproves the use of valve disassembly and visual inspection as an alternative for check valves where it has

been determined that testing is impractical. A sampling plan is used for groups of check valves which are identical (i.e., same manufacturer, type, size, etc.) in construction and for which the system operating environment is the same. The group size has been limited to a maximum of four valves per group, such that each valve shall be disassembled at least once every six years. The sampling plan selects one valve from each group for disassembly during each refueling outage. If the selected valve passes inspection, a second valve is selected for disassembly at the next refueling, etc. until the group has been completed or until such time that sufficient inspections have been performed to justify an alternate sampling plan. For those cases where disassembly indicates that there are no valve problems, a new relief request may be prepared to perform less frequent inspections.

Failure of the selected valve to pass inspection will initiate additional valve disassembly as specified by the appropriate Program relief request.

The sample disassembly and inspection program includes verification that the valve is capable of full-stroke operation and visual inspection for worn or corroded parts. For valves with hinge pins in the valve body, full-stroke operability is verified by manually exercising the valve through a complete cycle. For valves with hinge pins in the removable bonnet, such that the valve internals are removed from the valve body during disassembly, direct verification of full-stroke operability by manually exercising is not possible. For these valves, full-stroke operability determination will be by visual inspection of valve internals for evidence of wear, binding, etc., and by stringent valve reassembly procedures. At a minimum a partial forward flow test shall occur after reassembly.

III.3.30 Pump Discharge Header Train Isolation Block Valves

Where safety-related pumps discharge to a common header with header power operated

block valves, valve testing depends on valve safety-related function and system operating modes. If the valves are relied upon to provide train separation (i.e., close one or more valves to establish independent pump flow paths) the valves are stroke tested. If the valves are for alignment purposes only (i.e., substituting an installed spare pump in place of a normally aligned pump) the valves are for operating convenience and have been excluded from the program. If the valves require testing, an analysis was performed to determine if stroking would place the plant in an degraded condition (i.e., isolation of ECCS required flow path). If a degraded condition or extended testing time could exceed the Technical Specifications Action Statement, then testing would be delayed. These specific conditions are identified per Cold Shutdown Justifications or Relief Requests.

III.3.31 Technical Specification/Unanalyzed Condition Analysis

Each stroke tested valve has been analyzed to determine if stroking the valve would violate plant Technical Specification requirements or place the plant in an degraded condition. For example, if Technical Specifications requires that two independent flow paths be available during normal operation and testing could exceed the Technical Specification Action Statement then testing would be delayed. In addition, if failure of a valve in a nonconservative position during test would place the plant in an unanalyzed configuration (i.e., reduce ECCS flow to below minimum required flow rates) then testing will be delayed.

III.3.32 Valve Test Data Analysis - Limiting Value of Stroke Time

The valve stroke time test data will be reviewed immediately upon completion of test to determine if the individual valve limiting value of stroke time has been exceeded. If the valve stroke time data exceeds the limiting value, the effect on Technical Specification operability will be assessed immediately and actions taken as appropriate.

III.3.33 Valve Inoperability - Effect on System Operability

There are a number of valves in the test program whose failure to pass Section XI test requirements may not affect safety-related system operability. For example, a normally closed power operated pump test line valve which fails in the closed position would not prevent the system from performing its safety-related operating function(s). When a valve fails to pass Section XI test criteria an analysis will be performed to determine what effect valve inoperability has on system operability. If system operability is affected, the plant Technical Specifications provide the system operability requirements. This analysis will be performed without delay upon valve failure and, if system operability is affected then the action statement to the applicable LCO shall be met. If valve failure does not affect safety-related system operability the valve will be declared inoperable and valve retest and/or appropriate corrective action initiated.

III.3.34 Valve Retests to Verify Operability

If a valve failed to pass Section XI test criteria and the valve has been declared inoperable a valve retest may be performed. If the valve passes the retest it will be declared operable. If the valve fails the retest then corrective action shall occur or the applicable action statements of the Technical Specification or the applicable ASME Section XI will be met.

III.3.35 NRC Information Notices and Bulletins

NRC issued Information Notices and Bulletins relating to valves were reviewed and incorporated, as applicable.

III.4 Cold Shutdown Justification

The referenced Code edition allows delay of testing to cold shutdown when testing quarterly during normal operation is not practical. Even though a relief request is not necessary, the NRC requests that a

justification for delay of testing to cold shutdown condition be provided. This program rovides a cold shutdown justification for each valve where testing is delayed to cold shutdown.

III.5 Generic Letter 89-04 Justifications

NRC Generic Letter 89-04 provides approval of several ASME Code alternative test requirements providing the Pump and Valve test programs are consistent with the positions taken in Attachment 1 of the Generic Letter. The Generic Letter states that these preapproved alternatives to the code should be identified for each applicable valve in the valve test program. This program identifies these valves by referencing Generic Letter 89-04 justifications. These justifications provide the basis for the need to use the Generic Letter alternative testing and reference the applicable Generic Letter preapproved alternative.

III.6 Relief Requests

Where Code specified test requirements cannot be met or testing must be delayed to refueling outages the NRC requires that a relief request be provided. This program provides a relief request for each valve which cannot be tested in compliance with Code test requirement and/or testing is delayed to refueling outages.

III.7 Valve Test Records

A system of records of valve inservice testing will be maintained at the site in accordance with IWV-6000 of Section XI.

III.8 GENERAL RELIEF REQUESTS FOR VALVES

This section requests relief from specific requirements of Section XI found to be impractical for this site. Since they are general in nature and pertain to a number of components, this section requests general relief as presented below:

General Relief Request:	VG-1
Components:	Valves tested at cold shutdown
Category:	A, B, C
Code Requirements:	IWV-3417 states that when corrective action is required as a result of tests made during cold shutdown, the condition shall be corrected before startup. A retest showing acceptable operation shall be run following any required corrective action before the valve is returned to service.
Basis for Relief:	The plant technical specifications provide the system operability requirements for plant startup and mode changes. The failure of a valve to pass Section XI test requirements may not affect system operability or prevent the system from performing its safety-related function(s). For example, failure of a normally closed power operated valve in a pump test line to open does not affect system operability and does not prevent the system from performing its safety-related function(s).
Alternate Testing:	When a valve fails Section XI test criteria during cold shutdown testing an analysis will be performed to determine if the test failure results in system inoperability or would prevent the system from performing its safety-related function(s) with the failure present. If the analysis determines a valve test failure does not cause system to be inoperable then the plant may startup providing corrective action is being or will be performed on the valve. A retest showing acceptable operation shall be run following any required corrective action before the valve is returned to service.

General Relief Request: VG-2

Component: Pressure Isolation Valves

Code Requirements: Section XI Category A valves will be leak tested to the requirements of IWV-3420.

Category: A, AC

Basis for Relief: Technical Specification Section 3.4.6.2 defines the limiting condition for operation and Section 4.4.6.2.2 defines the surveillance requirements for pressure isolation valves as follows:

"Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-2 shall be individually demonstrated operable by verifying leakage testing (or equivalent) to be within its limit prior to entering Mode 2:

a. After each refueling outage

b. Whenever the plant has been in COLD SHUTDOWN for 72 hours, or more, and if leakage testing has not been performed in the previous 9 months, and

c. Prior to returning the valve to service following maintenance, repair, or replacement work on the valve."

Leakage rates are defined per Table 3.4-2, Notes.

Alternate Testing: The as defined surveillance testing will be performed to meet Technical Specifications. If leakage is greater than described above then repair or replacement shall be performed to restore the component to an acceptable condition. This action is equivalent to IWV-3420 requirements. To address the Reactor Safety Study, WASH 1400 Event V Considerations, CF30, CF31, DH76, and DH77 will be leak tested prior to Reactor Startup when a differential pressure of 100 PSID or less has occurred across any of these check valves.

General Relief Request:	VG-3
Component:	Valves required to shutdown the reactor to cold shutdown condition.
Code Requirements:	The Scope of ASME, Section XI, Subsection IWV 1100 provides the rules and requirements for inservice testing to assess operational readiness of certain Class 1, 2, and 3 valves in light water cooled nuclear power plants, which are required to perform a specific function in shutting down a reactor to the cold shutdown condition, in mitigating the consequences of an accident or in providing overpressure protection.
Category:	A,B,C,D
Basis for Relief:	Davis-Besse Power Station defines shutting down the reactor per Section 7.4.1 of the USAR as that station condition in which the reactor is 1.0 percent subcritical and the reactor coolant system temperature and pressure are in the normal operating range. Per Davis-Besse Technical Specification this condition is defined as Mode 3, Hot Standby. A Cold Shutdown condition is not required to shutdown the reactor. The licensing basis for safe shutdown is hot standby.
Alternate Testing:	No alternate testing is required. Present Inservice Testing program is limited to those systems and components to reach a safe shutdown condition. This condition is defined as Mode 3, Hot Standby per Section 1.0, Definitions for Technical Specifications. Those systems and components required to reach a Cold Shutdown conditions are addressed in an augmented valve test program.

III.9 VALVE DRAWING LIST

ASME Class 1, 2, and 3 Systems

System	P&ID No.
Reactor Coolant	M-030 A
	M-040 A
	M-040 B
Core Flood	M-033 B
	M-034
Containment Spray	M-034
Decay Heat	M-033 A
	M-033 B
	M-033 C
	M-042 C
D G Air Start	M-017 B
High Pressure Injection	M-033 A
Makeup	M-031 A
	M-031 B
	M-031 C
	M-045
	OS-002
Main Steam	M-003 A
	M-003 C
	M-007 A
	M-007 B
Feedwater	M-006 D
	M-007 B
Auxiliary Feedwater	M-006 D
	M-007 B
Service Water	M-006 D
	M-031 C
	M-041 A
	M-041 B
	M-041 C
Component Cooling Water	M-036 A
	M-036 B
	M-036 C
	M-040 D
Containment Vacuum Relief	M-029 B
Containment Purge	M-029 E
Containment Hydrogen Control	M-029 B
	M-029 D
Aux. Bldg. Radwaste, Fuel Handling and Access Control Area HVAC	M-028 B
Nitrogen Supply	M-019
	M-036
Demineralized Water	M-010 C
	M-036 A
Sample	M-007 A
	M-040 A
Borated Water	M-033 A

Instrument Air	M-015 A
Station Air	M-015 D
	M-034
Station Drainage	M-046
Gaseous Radioactive Waste	M-038 B
	M-038 C
Auxiliary Steam	M-003 C

III.10 VALVE TEST TABLE NOMENCLATURE

The following abbreviations have been used in the Valve Test Tables:

Legend for Valve Categories

Category		Description
A	-	Valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their function.
B	-	Valves for which seat leakage in the closed position is inconsequential for fulfillment of their function.
C	-	Valves which are self-actuating in response to some system characteristic.
D	-	Valves which are actuated by an energy source capable of only one operations, such as rupture disks or explosive-actuated valves.
AC	-	Valves which are both Category A and C.
BC	-	Valves which are both Category B and C.

Legend of Valve Type

AN	-	Angle Valve	TW	-	Three Way
BF	-	Butterfly Valve	TR	-	Thermal Relief
BL	-	Ball Valve	SK	-	Spring Check
CK	-	Check Valve	PG	-	Plug
DA	-	Diaphragm Valve	RG	-	Regulating
GT	-	Gate Valve	RD	-	Rupture Disk
GL	-	Globe Valve	VR	-	Vacuum Relief
RL	-	Safety or Pressure Relief Valve	MK	-	Manual Testable Check
SC	-	Stop Check Valve			
ND	-	Needle	TK	-	Power Operated Testable Check

Legend of Valve Actuator Type

AO	-	Air Operated	SA	-	Self Actuating
SO	-	Solenoid	EM	-	Electro-Mech
MA	-	Manual	HO	-	Hydraulic
MO	-	Motor Operated			

Legend of Valve Positions: Normal, Fail, or Safety-Related

AI - As Is
C - Closed
O - Open
O/C - Open or Closed
LC - Locked Closed
LO - Locked Open
LT - Locked Throttled

Legend for Frequency of Test

Q - Quarterly
R - Refueling
T - Per ANSI/ASME OM-1-1981
2 - 2 Years
C - Cold Shutdown

Legend for Valve Testing Requirements

TO - Stroke and Time Open
TC - Stroke and Time Closed
FO - Fail Safe Test Open
FC - Fail Safe Test Closed
SR - Relief Valves
VR - Vacuum Relief Valves
LJ - Leak Test per Appendix J, Type C (Containment Isolation)
LP - Leak Test per Section XI (Pressure Isolation)
LC - Leak Test per both Appendix J, Type C, and Section XI
PI - Remote Position Indicator Verification
FF - Check Valve Forward Flow Closure Verification
RF - Check Valve Reverse Flow Closure Verification
MK - Testable Check Valve with Manual Exerciser
TK - Testable Check Valve with Power Operated Exerciser
SO - Stroke Open Without Timing
SC - Stroke Closed Without Timing
RD - Rupture Disk
PAS - Passive Valve
PQRM - Partial-stroke test exercised quarterly. Valve disassembled during refueling and manual stroke test exercised.
RM - Valve disassembled during refueling and manual stroke test exercised.
PQR - Partial-stroke test exercised quarterly and full-stroke test exercised during refueling.
PQCS - Partial-stroke test exercised quarterly and full-stroke test exercised during cold shutdown.
PCS - Partial-stroke test exercised during cold shutdown and full-stroke test exercised during refueling.
PCRM - Partial-stroke test exercised at cold shutdown. Valve disassembled during refueling and manual stroke test exercised.

Legend for Valve Table Headings

VALVE NO.	-	Unique valve identification number.
CAT. & CL.	-	Category of valve as defined in IWV-2200, and ASME Class as determined for Section XI
DRAWING NO & COORD.	-	Piping and instrumentation drawing (P&ID) number, and location on P&ID where valve is shown.
SIZE & TYPE	-	Nominal pipe size diameter of the valve, and type of valve (i.e., check, globe, gate).
ACT. TYPE & FAIL POS.	-	Type of valve actuator (i.e., motor, air) and position to which the valve travels upon a loss-of-actuator power or air.
POS. NORMAL S. R. OP.	-	Normal position of valve, and valve position & when it performs its safety related (i.e., open, closed or open/closed) function.
CODE TEST REQ.	-	Section XI valve test requirements.
C.S. OR RELIEF REQUEST	-	Reference number of a cold shutdown justification or relief request which are located following the valve test tables for each system.
C.S. OR ALTERNATE TEST	-	Cold Shutdown or alternate testing which is being performed in lieu of Code specified quarterly testing.
DESCRIPTION NOTES	-	A brief description of valve function, and & applicable notes.
REV. NO.	-	Revision Number.

Valve Subsystem Index

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: AUXILIARY FEEDWATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
AF1	C 3	M-0060 G-6	8 CK	SA NA	C O/C	RF-Q FF-Q	CS-1	RF-C	CST to AFW pump suction line check valve.	
AF2	C 3	M-0060 J-4	8 CK	SA NA	C O/C	RF-Q FF-Q	CS-1	RF-C	CST to AFW pump suction line check valve.	
AF15	C -	M-0060 E-10	2 CK	SA NA	C O	FF-Q			AFW pump min. flow line check valve.	
AF16	C -	M-0060 J-10	2 CK	SA NA	C O	FF-Q			AFW pump min. flow line check valve.	
AF19	C 3	M-0060 G-11	6 CK	SA NA	O O	FF-Q			AFW pump discharge line check valve.	
AF20	C 3	M-0060 J-11	6 CK	SA NA	O O	FF-Q			AFW pump discharge line check valve.	
AF39	C 2	M-007B B-12	6 CK	SA NA	C O/C	FF-Q RF-Q	RV-1 CS-2	PCS RF-C	AFW to SG injection line check valve.	
AF43	C 3	M-007B B-4	6 CK	SA NA	C O/C	FF-Q RF-Q	RV-1 CS-2	PCS RF-C	AFW to SG injection line check valve.	
AF49	C 3	M-0060 C-6	6 CK	SA NA	C C	RF-Q	CS-2	RF-C	Motor driven FW pump discharge to AFW sys. line check valve.	
AF52	C 3	M-0060 D-6	6 CK	SA NA	C C	RF-Q	CS-2	RF-C	Motor driven FW pump discharge to AFW sys. line check valve.	
AF63	C 3	M-0060 G-8	1 CK	SA	O/C O/C	RF-Q FF-Q	CS-3	RF-C	AFP 1 cooling water recirculation to AFP 1 suction.	
AF68	C 3	M-0060 K-6	1 CK	SA	O/C O/C	RF-Q FF-Q	CS-3	RF-C	AFP 2 cooling water recirculation to AFP2 suction.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: AUXILIARY FEEDWATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
AF72	C 1	M-007B B-10	6 CK	SA NA	C O/C	FF-Q RF-Q	RV-1 CS-2	PCS RF-C	AFW pump discharge cross-tie line check valve.	
AF73	C 3	M-007B A-8	6 CK	SA NA	O O	FF-Q	RV-1	PCS	AFW pump discharge cross-tie line check valve.	
AF74	C 3	M-007B A-7	6 CK	SA NA	O O	FF-Q	RV-1	PCS	AFW pump discharge cross-tie line check valve.	
AF75	C 3	M-007B B-5	6 CK	SA NA	C O/C	FF-Q RF-Q	RV-1 CS-2	PCS RF-C	AFW pump discharge cross-tie line check valve.	
AF599	B 2	M-007B B-2	6 GT	MO AI	LO C	TC-Q PI-Y			AFW to SG line block valve.	
AF608	B 2	M-007B B-13	6 GT	MO AI	LO C	TC-Q PI-Y			AFW to SG line block valve.	
AF3869	B 3	M-007B A-8	6 GT	MO AI	C O/C	TO-Q TC-Q PI-Y			AFW pump discharge line isolation valve.	
AF3870	B 3	M-007B A-10	6 GT	MO AI	O O/C	TO-Q TC-Q PI-Y			AFW pump discharge line isolation valve.	
AF3871	B 3	M-007B A-7	6 GT	MO AI	C O/C	TO-Q TC-Q PI-Y			AFW pump discharge line isolation valve.	
AF3872	B 3	M-007B A-5	6 GT	MO AI	O O/C	TO-Q TC-Q PI-Y			AFW pump discharge line isolation valve.	
AF4979	C 3	M-0060 H-9	1 X 1 RL	SA NA	C O	SR-T			AFW pump cooler line relief valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: AUXILIARY FEEDWATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
AF4980	C 3	M-006D K-6	1 X 1 RL	SA NA	C O	SR-T			AFW pump cooler line relief valve.	
AF6451	B 3	M-006D J-12	4 GT	SO O	O O	TO-Q FO-Q	RV-1 RV-2	TO-Q FO-Q	AFW pump discharge flow control valve.	
AF6452	B 3	M-006D G-12	4 GT	SO O	O O	TO-Q FO-Q	RV-2 RV-2	TO-Q FO-Q	AFW pump discharge flow control valve.	

RELIEF REQUEST

RV-1

SYSTEM: AUXILIARY FEEDPUMP

VALVE(s): AF39, AF43, AF72, AF73, AF74, AF75

CATEGORY: C

CLASS: 3

FUNCTION: Motor Driven Feedwater pump and Auxiliary Feedwater Pump Discharge to the Steam Generator Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify forward flow operability.

BASIS FOR RELIEF: The Auxiliary Feedwater nozzles spray water directly onto the tubes at the upper end of the OTSG. Injecting this relatively cold water during plant operation causes severe thermal stresses in the OTSG and may also lead to moisture carryover in the steam, damaging the main turbine. The consequences of these effects make it undesirable to forward flow test the listed check valves quarterly.

The cavitating venturis installed in the Auxiliary Feedwater lines limit the maximum flow to a hot, pressurized steam generator by inducing sonic, two-phase flow through the venturi. Full flow at the reduced back pressure existing during cold shutdown conditions causes violent cavitation in the venturi. The resulting severe vibration and pipe movement behavior, similar to the effects of water hammer, could result in extensive damage to the piping and pipe supports. This problem is avoided by temporarily replacing each venturi with a full-flow spool piece. However, the length of time required and the wear on the affected systems resulting from this maintenance activity make it impractical to do this more frequently than on a refueling interval.

ALTERNATE TESTING: Valves will be partial flow tested at cold shutdown with cavitating venturis installed.

Valves will be full-flow tested at each refueling with the cavitating venturis replaced with spool pieces.

RELIEF REQUEST

RV-2

SYSTEM: AUXILIARY FEEDWATER

VALVE(s): AF6451, AF6452

CATEGORY: B

CLASS: 3

FUNCTION: Auxiliary Feedwater Pump Discharge to Steam Generator Line Flow Control Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Exercise, time, and fail position.

BASIS FOR RELIEF: These are Target Rock, solenoid operated valves with position indication from linear variable differential position transmitters. Valve actuator is a closed cylinder containing the upper valve stem, a solenoid positioner, and stem position string instrumentation. Valve position is not directly observed. Valve stroke time is dependent on system flow rates.

Stroke time is measured from open signal till a predetermined output voltage from the linear variable differential position transmitter indicates the valve is full open.

ALTERNATE TESTING: Valves will be timed and fail tested quarterly. Stroke times will be obtained indirectly using output voltage from the linear variable differential position transmitter at no system flow.

Position indication and fail safe position will be verified using system flow each quarter.

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: AUXILIARY FEEDWATER

VALVE(s): AF1, AF2

CATEGORY: C

CLASS: 3

FUNCTION: Condensate Storage Tank to Auxiliary Feedwater Pump Suction Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: There are two possible methods which could be used to verify reverse flow testing. First the use of Service Water as a pressure source against the check valve which is not acceptable due to water chemistry. Second using a demineralized water source with pressure or flow instrumentation to verify reverse flow closure. Reverse flow testing would require extensive lineups and test conditions hence causing the respective Aux Feedpump inoperability time period to exceed the Technical Specification Action Statement. This would be in violation of Technical Specification 3.7.1.2 which requires the operability of the Auxiliary Feedwater system.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: These valves will be reverse flow tested using an external source of demineralized water and instrumentation to verify reverse flow.

COLD SHUTDOWN TEST JUSTIFICATION

CS-2

SYSTEM: AUXILIARY FEEDPUMP

VALVE(s): AF39, AF43, AF49, AF52, AF72, AF75

CATEGORY: C

CLASS: 3

FUNCTION: Steam Driven Auxiliary Feedwater Pump and Motor Driven Feedwater Pump Discharge to Steam Generator Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow operability.

COLD SHUTDOWN TEST JUSTIFICATION: The only way to verify reverse flow operability could exceed the present action statement time limit for the Auxiliary feed system. A demineralized water source, valve lineups, and pressure or flow instrumentation would be required to verify no reverse flow for each check valve. Reverse flow testing would require extensive lineups and test conditions hence causing the respective Aux Feedpump inoperability time period to exceed the Technical Specification Action Statement. This would be in violation of Technical Specification 3.7.1.2 which requires the operability of the Auxiliary Feedwater system. During normal daily power operation, plant operators on their rounds will verify no reverse flow by physically touching the auxiliary feed pump discharge piping to ensure no reverse flow from the steam system.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: These valves will be reverse flow tested using an external source of demineralized water and instrumentation to verify reverse flow.

COLD SHUTDOWN TEST JUSTIFICATION

CS-3

SYSTEM: AUXILIARY FEEDPUMP

VALVE(s): AF63, AF68

CATEGORY: C

CLASS: 3

FUNCTION: Provides return flow path for auxiliary feedwater pump cooling water recirculation to the pump suction. Prevents inadvertent challenges to Auxiliary Feedwater pump cooler line relief valve(s) when service water is aligned.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow operability.

COLD SHUTDOWN TEST JUSTIFICATION: The only way to verify reverse flow operability could exceed the present action statement time limit for the Auxiliary feed system. A demineralized water source, valve lineups, and pressure or flow instrumentation would be required to verify no reverse flow for each check valve. Reverse flow testing would require extensive lineups and test conditions hence causing the respective Aux Feedpump inoperability time period to exceed the Technical Specification Action Statements. This would be in violation of Technical Specification 3.7.1.2 which requires the operability of the Auxiliary Feedwater system.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: These valves will be reverse flow tested using an external source of demineralized water and instrumentation to verify reverse flow.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: AUXILIARY STEAM

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
AS274	C 3	M-003C F-6	6 CK	SA NA	C C	RF-Q	RV-1	RF-R	AS to AFW pump turbine line check valve.	

RELIEF REQUEST

RV-1

SYSTEM: AUXILIARY STEAM

VALVE(s): AS274

CATEGORY: C

CLASS: 3

FUNCTION: Auxiliary Steam to Auxiliary Feedwater Turbine Test Line Check Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify reverse flow closure.

BASIS FOR RELIEF: The only time this line is open is during modes 4, 5, and 6 for test purposes. During normal operation the inline manual isolation valve AS273 is maintained closed. The valve provides the boundary between the class 3 Auxiliary Feedwater System and the non-class Auxiliary Steam System. The only safety-related function for this valve is to remain closed on loss of Auxiliary Steam System integrity.

ALTERNATE TESTING: Valve reverse flow closure will be verified each time the isolation valve has been opened and the valve is exercised, but not more than a frequency of once every 92 days.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: BORATED WATER STORAGE

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
BW26	C -	M-033A A-13	3 CK	SA NA	O/C C	RF-Q			Return line to BWST check valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: COMPONENT COOLING WATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CC17	C 3	M-036A D-5	16 CK	SA NA	O/C O/C	FF-Q RF-Q	CS-8 CS-7	PQCS RF-C	CCW pump discharge line check valve.	
CC18	3	M-036A G-5	16 CK	SA NA	O/C O/C	FF-Q RF-Q	CS-8 CS-7	PQCS RF-C	CCW pump discharge line check valve.	
CC19	C 3	M-036A J-5	16 CK	SA NA	O/C O/C	FF-Q RF-Q	CS-8 CS-7	PQCS RF-C	CCW pump discharge line check valve.	
CC127	C 3	M-036B G-3	1.5 SC	SA NA	O/C O/C	RF-Q FF-Q	CS-11 CS-13	RF-C PQCS	Makeup pump 1-1 non-essential isolation check valve.	
CC128	C 3	M-036B G-4	1.5 SC	SA NA	O/C O/C	RF-Q FF-Q	CS-11 CS-13	RF-C PQCS	Makeup pump 1-2 non-essential isolation check valve.	
CC129	C 3	M-036B E-3	1.5 SC	SA NA	O/C O	FF-Q			CCW cooling return from Makeup Pump 1 to CCW Loop 1.	
CC130	C 3	M-036B E-5	1.5 SC	SA NA	O/C O	FF-Q			CCW cooling return from Makeup Pump 2 to CCW Loop 2.	
CC148	C 3	M-036B J-9	.5 SC	SA NA	O/C O	FF-Q			Bearing cooling water inlet to Decay Heat Pump 1-1.	
CC149	C 3	M-036B H-9	.5 SC	SA NA	O/C O	FF-Q			Bearing cooling water inlet to Decay Heat Pump 1-2.	
CC151	C 3	M-036B J-7	.75 SC	SA NA	O/C O	FF-Q			Bearing cooling water outlet from Decay Heat pump 1-1.	
CC153	C 3	M-036B H-8	.5 SC	SA NA	O/C O	FF-Q			Bearing cooling water outlet from Decay Heat Pump 1-2.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: COMPONENT COOLING WATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CC183	C 3	M-040D J-3	1.5 SC	SA NA	O C	RF-Q	RV-1	RF-C	CCW inlet to RCS Pump thermal barrier line check valve.	
CC256	C 3	M-036B C-3	1.5 SC	SA NA	O/C O	FF-Q	CS-13	PQCS	CCW cooling from Loop 1 for Makeup Pump 1.	
CC263	C 3	M-036B C-5	1.5 SC	SA NA	O/C O	FF-Q	CS-13	PQCS	CCW cooling from Loop 2 for Makeup Pump 2.	
CC283	C 3	M-040D J-4	1.5 CK	SA NA	O C	RF-Q	RV-1	RF-R	CCW inlet to RCS Pump thermal barrier line check valve.	
CC383	C 3	M-040D J-4	1.5 CK	SA NA	O C	RF-Q	RV-1	RF-R	CCW inlet to RCS Pump thermal barrier line check valve.	
CC483	C 3	M-040D J-4	1.5 CK	SA NA	O C	RF-Q	RV-1	RF-R	CCW inlet to RCS Pump thermal barrier line check valve.	
CC532	C 3	M-036A F-9	20 CK	SA NA	C C	RF-Q	CS-6	RF-C	CCW pump discharge header isolation check valve.	
CC533	C 3	M-036A H-9	20 CK	SA NA	O C	RF-Q	CS-6	RF-C	CCW pump discharge header isolation check valve.	
CC1328	B 3	M-036C G-14	3 GT	MO AI	O C	TC-Q PI-Y			CCW inlet to CRDC Booster pump block valve.	
CC1338	B 3	M-036C G-11	3 GT	MO AI	O C	TC-Q PI-Y			CCW inlet to CRDC Booster pump block valve.	
CC1407A	A 2	M-036C A-11	12 BF	MO AI	O C	TC-Q LJ-R PI-Y	CS-2	TC-C	CCW return from Letdown Coolers Ctmt. isolation valve.	
CC1407B	A 2	M-036C A-13	12 BF	MO AI	O C	TC-Q LJ-R PI-Y	CS-2	TC-C	CCW return from Letdown Coolers Ctmt. isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: COMPONENT COOLING WATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CC1409	B 3	M-036C B-7	4 GT	MO	C/O C	TC-Q PI-Y	CS-10	TC-C	CCW to inlet of the Letdown Cooler	
CC1410	B 3	M-036C B-7	4 GT	MO	C/O C	TC-Q PI-Y	CS-10	TC-C	CCW to inlet of the Letdown Cooler	
CC1411A	A 2	M-036C E-7	12 BF	MO AI	O C	TC-Q LJ-R PI-Y	CS-2	TC-C	CCW to Letdown Coolers Ctmt. isolation valve.	
CC1411B	A 2	M-036C F-7	12 BF	MO AI	O C	TC-Q LJ-R PI-Y	CS-2	TC-C	CCW to Letdown Coolers Ctmt. isolation valve.	
CC1460	B 3	M-036A F-11	1.5 GL	AO C	O C	TC-Q FC-Q PI-Y	CS-1 CS-1	TC-C FC-C	CCW to Non-safety-related loads isolation valve.	
CC1467	B 3	M-036B B-8	18 BF	AO O	C O	TO-Q FO-Q PI-Y			DH HX CCW outlet line isolation valve.	
CC1469	B 3	M-036B A-9	18 BF	AO O	C O	TO-Q FO-Q PI-Y			DH HX CCW outlet line isolation valve.	
CC1471	B 3	M-036B E-8	6 BF	AO O	C O	TO-Q FO-Q PI-Y			DG jacket cooling water HX CCW outlet line isolation valve.	
CC1474	B 3	M-036B G-8	6 BF	AO O	C O	TO-Q FO-Q PI-Y			DG jacket cooling water HX CCW outlet line isolation valve.	
CC1495	B 3	M-036A H-11	16 BF	AO C	O C	TC-Q FC-Q PI-Y			CCW to Non-safety-related loads isolation valve.	
CC1567A	A 2	M-036C C-12	3 GT	MO AI	O C	TC-Q LJ-R PI-Y	CS-3	TC-C	CCW inlet to CRD cooling Ctmt. isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: COMPONENT COOLING WATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CC5098	B 3	M-0368 B-5	12 GT	MO AI	C C	TC-Q PI-Y	CS-5	TC-C	Letdown Cooler return to CCW line block valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC1460

CATEGORY: B

CLASS: 3

FUNCTION: CCW to Nonessential Loads Isolation Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise, time, and fail.

COLD SHUTDOWN TEST JUSTIFICATION: Exercising this valve closed during normal operation isolates Component Cooling Water flow to the Makeup pump gear and pump lube oil coolers. At least one makeup pump is in normal operation. Isolation of cooling water to the operating pump for more than a few minutes could result in extensive damage to the pump.

QUARTERLY PARTIAL STROKE TESTING: Valve full-strokes on initiation and cannot be part-stroke exercised.

COLD SHUTDOWN TESTING: Exercise, time, and fail when the makeup pumps are secured.

COLD SHUTDOWN TEST JUSTIFICATION

CS-2

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC1407A, CC1407B, CC1411A, CC1411B

CATEGORY: A

CLASS: 2

FUNCTION: Inlet and Outlet Component Cooling Water Containment Isolation Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: These are the containment isolation valves for the Reactor Coolant System pump motor, seal cooler and bearing coolers lines. A loss of cooling water for more than a few minutes could result in extensive damage to the reactor coolant pumps. Plant Technical Specification 3.4.1.1 requires the reactor coolant pumps and associated support equipment to be operable when the plant is in modes 1 and 2.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on initiation and cannot be part-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time at cold shutdown when all reactor coolant pumps are secured.

COLD SHUTDOWN TEST JUSTIFICATION

CS-3

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC1567A, CC1567B

CATEGORY: A

CLASS: 2

FUNCTION: Component Cooling Water to Control Rod Drives Containment Isolation Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: These are containment isolation valves in the cooling line to the control rod drive mechanisms. A loss of cooling water for more than a few minutes could result in extensive damage to the control rod drive mechanisms. Plant operating procedure requires that these valves be maintained open during normal operation.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on initiation and cannot be part-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-4

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC4100, CC4200, CC4300, CC4400

CATEGORY: B

CLASS: 3

FUNCTION: CCW Outlet from RCP Pump Thermal Barrier Heat Exchanger Outlet Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: Exercising these valves closed during normal operation terminates cooling water to the reactor coolant pump thermal barriers. A loss of cooling water to the thermal barriers for more than a few minutes could result in extensive damage to the reactor coolant pumps. Plant Technical Specification 3.4.1.1 requires the reactor coolant pumps and associated support equipment to be operable when the plant is in modes 1 and 2.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on initiation and cannot be part-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time at cold shutdown when the associated reactor coolant pump is secured.

COLD SHUTDOWN TEST JUSTIFICATION

CS-5

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC5097, CC5098

CATEGORY: B

CLASS: 3

FUNCTION: CCW Containment Header Return Line Isolation Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: These valves are in the return line from the CCW containment header. Normally one valve is open to the operating CCW return header. The other valve is closed to the non-operating CCW return header. If the open valve is exercised closed, cooling water to the RCS pumps is terminated. Termination of cooling water to the RCS pumps for more than a few minutes could result in extensive damage to the RCS pumps. The only way to exercise these valves without terminating flow to the RCS pump would be to establish flow to the normal standby return header and exercise the open valve in the normal operating return line closed. This test procedure would violate train separation criteria and could place the plant in an unanalyzed condition.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on initiation and cannot be part-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-6

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC532, CC533

CATEGORY: C

CLASS: 3

FUNCTION: CCW Pump Discharge Header Isolation Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: These valves provide train separation from the essential CCW supply headers to the common supply header for non-essential CCW loads. To verify reverse flow closure during normal operation would require realignment of the normal operating essential loop, standby essential loop, and nonessential normal operating headers. Realignment of these loops and headers during normal operation could result in system operational transient and could result in a forced plant shutdown.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION

CS-7

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC17, CC18, CC19

CATEGORY: C

CLASS: 3

FUNCTION: Component Cooling Water Pump Discharge Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify reverse flow closure of each pump discharge valve quarterly.

BASIS FOR RELIEF: All three CCW pumps are connected to a common header. The header is normally aligned such that two pumps are aligned to one essential loop, with one pump normally in operation to supply normal operating loads. The second pump is an installed spare and only started to replace the normally operating pump. The third pump is aligned to the second essential loop and is normally in a standby mode. To test all three pump discharge check valves for reverse flow closure would require swapping the running component cooling water loop. The step change in cooling water temperature when flow is initiated in the previously idle loop can result in damage to the operating Reactor Coolant Pump (RCP) seals. Since Technical Specifications 3.4.1.1 requires the RCPs to be operable when the plant is in Modes 1 and 2, damage to RCP seals would necessitate a plant shutdown. This system configuration could also violate train separation criteria and could place the system in an unanalyzed condition.

QUARTERLY PARTIAL STROKE TESTING: Reverse flow closure verification will be performed quarterly when the respective CCW pump is aligned as the standby or spare pump. Reverse flow closure verification will be performed if a running CCW pump has been stopped, the

respective check valve has not been tested within 92 days, and can be tested without cross tying essential headers.

COLD SHUTDOWN TESTING:

Reverse flow verification will be performed at each cold shutdown if not performed within 92 days.

COLD SHUTDOWN TEST JUSTIFICATION

CS-8

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC17, CC18, CC19

CATEGORY: C

CLASS: 3

FUNCTION: Component Cooling Water Pump Discharge Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify forward flow operability.

COLD SHUTDOWN TEST JUSTIFICATION: The only way to verify full-flow operability is by operating the associated Component Cooling Water pump at full design flow rate. The system is normally in operation supplying cooling water to normally operating equipment. System flow rate during normal operation is dependent on plant operating and climatic conditions. If the system flow rate is adjusted to full design flow to verify full-flow operability of these check valves, normal operation of the system would be disrupted and could cause system transients severe enough to result in a system trip or automatic isolation of cooling water to normally operating equipment and could result in accelerated equipment degradation or equipment damage.

QUARTERLY PART STROKE TESTING: Valves are partial forward flow test by normal system operation and during quarterly pump testing.

COLD SHUTDOWN TESTING: Valves will be partial forward flow tested quarterly and a full-flow test performed at cold shutdown.

COLD SHUTDOWN TEST JUSTIFICATION

CS-9

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC5095, CC5096

CATEGORY: B

CLASS: 3

FUNCTION: CCW Non-Essential Supply Line Isolation Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: These valves are in the supply line from the CCW Pump discharge header. Normally one valve is open to the operating CCW non-essential header. The other valve is closed to the non-operating CCW non-essential header. If the open valve is exercised closed, cooling water to the RCS pumps is terminated. Termination of cooling water to the RCS pumps for more than a few minutes could result in extensive damage to the RCS pumps. The only way to exercise these valves without terminating flow to the RCS pump would be to establish flow to the normal standby supply header and exercise the open valve in the normal operating supply line closed. This test procedure would violate train separation criteria and could place the plant in an unanalyzed condition.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on initiation and cannot be part-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-10

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC1409, CC1410

CATEGORY: B

CLASS: 3

FUNCTION: CCW Inlet Isolation Valve to the Letdown Heat Exchanger(s).

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: Exercising these valves closed during normal operation could cause loss of letdown flow since these valves are interlocked with their respective letdown cooler inlet isolation valve. Cycling these valves would cause excessive thermal cycling and shock degradation of the letdown cooler heat exchanger. Loss of letdown flow may cause High pressurizer level and per Technical Specification 3.4.4. result in a plant shutdown.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on initiation and cannot be partial-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-11

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC127, CC128

CATEGORY: B

CLASS: 3

FUNCTION: Isolates non-essential piping from the essential supply for Makeup pump cooling.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify Reverse flow operability.

COLD SHUTDOWN TEST JUSTIFICATION: Reverse flow testing these valves during normal operation requires swapping the running component cooling water loop. The step change in cooling water temperature when flow is initiated in the previously idle loop can result in damage to the operating Reactor Coolant Pump (RCP) seals. Since Technical Specifications 3.4.1.1 requires the RCPs to be operable when the plant is in Modes 1 and 2, damage to RCP seals would necessitate a plant shutdown. In addition tests time constraints could violated Technical Specification 3.1.2.4 action statement.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Reverse flow test.

COLD SHUTDOWN TEST JUSTIFICATION

CS-12

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC2645, CC2649

CATEGORY: B

CLASS: 3

FUNCTION: Isolates non-essential piping from the essential supply.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercised and time.

COLD SHUTDOWN TEST JUSTIFICATION: Exercising these valves during normal operation requires swapping the running component cooling water loop. The step change in cooling water temperature when flow is initiated in the previously idle loop can result in damage to the operating Reactor Coolant Pump (RCP) seals. Since Technical Specifications 3.4.1.1 requires the RCPs to be operable when the plant is in Modes 1 and 2, damage to RCP seals would necessitate a plant shutdown.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-13

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC127, CC128, CC256, CC263

CATEGORY: B

CLASS: 3

FUNCTION: Non-essential (CC127, CC128) and essential (CC256, CC263) cooling water supply to Makeup pumps.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify forward flow operability.

COLD SHUTDOWN TEST JUSTIFICATION: These valves supply cooling water in a redundant parallel path to the makeup pump bearing and gear oil systems. Normally, non-essential component water cooling will supply both pumps. Upon SFAS level 4, non-essential side cooling will be isolated and only the essential side will be available.

To test both non-essential and essential valves each quarter would require independent isolation of each parallel path. This would be critical to a running pump because if forward flow failure occurred then pump damage would occur.

QUARTERLY PART STROKE TESTING: Valves will be partial forward flow verified as a set when non-essential and essential cooling is supplied in parallel. The non-essential valves will be full forward flow verified when the essential cooling side is not in service.

COLD SHUTDOWN TESTING: Full-flow test performed at cold shutdown.

RELIEF REQUEST

RV-1

SYSTEM: COMPONENT COOLING WATER

VALVE(s): CC183, CC283, CC383, CC483

CATEGORY: C

CLASS: 3

FUNCTION: CCW Inlet to RCS Thermal Barrier Heat Exchanger Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify reverse flow closure.

BASIS FOR RELIEF: These tests cannot be performed quarterly during power operation because the system is in operation and cannot be isolated. Also, these valves are inside containment. These tests involve an excessive amount of time and personnel exposure to hazardous environments, potential delay of plant startup, and are too complex to be performed during cold shutdown. These valves will be scheduled for refueling outages.

ALTERNATE TESTING: Reverse flow closure will be verified during refueling.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CONTAINMENT HYDROGEN CONTROL

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CV124	AC 2	M-029B G-9	1 CK	SA NA	C O/C	FF-Q RF-Q LJ-R	RV-1	RF-R	Ctmt. gas analizer return Ctmt. isolation valve. Forward flow verified by inst. operation.	
CV125	AC 2	M-029B H-10	1 CK	SA NA	C O/C	FF-Q RF-Q LJ-R	RV-1	RF-R	Ctmt. gas analizer return Ctmt. isolation valve. Forward flow verified by inst. operation.	
CV186	C 3	M-029D F-11	2 CK	SA NA	C O	FF-Q			H2 dilution blower discharge line check valve.	
CV187	C 3	M-029D G-11	2 CK	SA NA	C O	FF-Q			H2 dilution blower discharge line check valve.	
CV209	AC 2	M-029D G-9	4 CK	SA NA	C O/C	FF-Q RF-Q LJ-R	RV-1	RF-R	H2 dilution blower discharge line Ctmt. isolation valve.	
CV210	AC 2	M-029D G-9	4 CK	SA NA	C O/C	FF-Q RF-Q LJ-R	RV-1	RF-R	H2 dilution blower discharge line Ctmt. isolation valve.	
CV343	A 2	M-029B G-4	8 GT	MA NA	LC C	PAS LJ-R			Ctmt. leak test line Ctmt. isolation valve.	
CV3876	C 3	M-029D G-12	1 X 1.5 RL	SA NA	C O	SR-T			H2 dilution blower moisture separator relief valve.	
CV3877	C 3	M-029D F-12	1 X 1.5 RL	SA NA	C O	SR-T			H2 dilution blower moisture separator relief valve.	
CV5010A	A 2	M-029B G-5	1 BL	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CONTAINMENT HYDROGEN CONTROL

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CV5010B	A 2	M-029B H-4	1 BL	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	
CV5010C	A 2	M-029B E-9	1 BL	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	
CV5010D	A 2	M-029B G-11	1 BL	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	
CV5010E	A 2	M-029B C-11	1.5 DA	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	
CV5011A	A 2	M-029B G-3	1 BL	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	
CV5011B	A 2	M-029B H-5	1 BL	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	
CV5011C	A 2	M-029B F-11	1 BL	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	
CV5011D	A 2	M-029B F-9	1 BL	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CONTAINMENT HYDROGEN CONTROL

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CV5011E	A 2	M-0298 H-11	1.5 DA	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			Ctmt. H2 analizer sample line Ctmt. isolation valve.	
CV5037	A 2	M-0290 H-4	4 BF	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			H2 purge Ctmt. isolation valve.	
CV5038	A 2	M-0290 H-4	4 BF	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			H2 purge Ctmt. isolation valve.	
CV5065	A 2	M-0290 G-10	4 BF	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			H2 dilution Ctmt. isolation valve.	
CV5090	A 2	M-0290 G-10	4 BF	MO AI	C O/C	TC-Q TO-Q LJ-R PI-Y			H2 dilution Ctmt. isolation valve.	

RELIEF REQUEST

RV-1

SYSTEM: CONTAINMENT HYDROGEN CONTROL

VALVE(s): CV124, CV125, CV209, CV210

CATEGORY: AC

CLASS: 2

FUNCTION: Containment Isolation Check Valves.

ASME SECTION XI
QUARTERLY TEST
REQUIREMENTS: Verify reverse-flow closure.

BASIS FOR RELIEF: The only method available to verify reverse-flow closure is by valve leak test during Appendix J, Type C, testing at refueling.

ALTERNATE TESTING: Reverse-flow closure will be verified during Appendix J, Type C, testing at refueling.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CONTAINMENT PURGE

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & F. POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CV5004	B 3	M-029E F-12	42 BF	AO C	O C	TC-Q FC-Q PI-Y			Penetration room supply line isolation valve.	
CV5005	A 2	M-029E E-11	48 BF	AO C	C C	TC-Q FC-Q LJ-R PI-Y	CS-1 CS-1	TC-C FC-C	Ctmt. purge supply Ctmt. isolation valve.	
CV5006	A 2	M-029E E-11	48 BF	AO C	C C	TC-Q FC-Q LJ-R PI-Y	CS-1 CS-1	TC-C FC-C	Ctmt. purge supply Ctmt. isolation valve.	
CV5007	A 2	M-029E G-5	48 BF	AO C	C C	TC-Q FC-Q LJ-R PI-Y	CS-1 CS-1	TC-C FC-C	Ctmt. purge exhaust Ctmt. isolation valve.	
CV5008	A 2	M-029E G-4	48 BF	AO C	C C	TC-Q FC-Q LJ-R PI-Y	CS-1 CS-1	TC-C FC-C	Ctmt. purge exhaust Ctmt. isoaltion valve.	
CV5009	B 3	M-029E G-4	42 BF	AO C	O C	TC-Q FC-Q PI-Y			Penetration room exhaust line isolation valve.	
CV5016	B 3	M-029E G-12	42 BF	AO C	O C	TC-Q FC-Q PI-Y			Penetration room supply line isolation valve.	
CV5021	B 3	M-029E G-4	42 BF	AO C	O C	TC-Q FC-Q PI-Y			Penetration room exhaust line isolation valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: CONTAINMENT PURGE

VALVE(s): CV5005, CV5006, CV5007, CV5008

CATEGORY: A

CLASS: 2

FUNCTION: Containment Purge Inlet (CV5005, CV5006) and Exhaust (CV5007, CV5008) Containment Isolation Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise, time and fail.

COLD SHUTDOWN TEST JUSTIFICATION: Valves are required to be closed and de-energized during plant operating modes 1, 2, 3 and 4 by plant Technical Specification 3.6.1.7. Valves are maintained normally closed to isolate direct flow paths from the containment atmosphere to the outside atmosphere. Valves may be opened during normal operation to purge the containment atmosphere if personnel access into the containment is required. Accumulated time for any purge supply and/or exhaust valve to be open is limited to 90 hours or less for the preceding 365 days. These valves are not to be open in Modes 1, 2, 3, or 4 as committed to the NRC.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on initiation and cannot be part-stroke exercised.

COLD SHUTDOWN TESTING: Exercise, time and fail.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CONTAINMENT SPRAY

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CS9	C 2	M-034 B-9	8 CK	SA NA	C O/C	FF-Q RF-Q	CS-1	RF-C	CS pump discharge line check valve.	
CS10	C 2	M-034 D-4	8 CK	SA NA	C O/C	FF-Q RF-Q	CS-1	RF-C	CS pump discharge line check valve.	
CS17	A 2	M-034 B-6	8 GL	MA NA	C C	PAS LJ-R			CS pump test line Ctmt. isolation valve. Pen. P25.	
CS18	A 2	M-034 C-6	8 GL	MA NA	C C	PAS LJ-R			CS pump test line Ctmt. isolation valve. Pen. P26.	
CS33	A 2	M-034 A-6	8 GT	MA NA	LC C	PAS LJ-R			CS pump test line Ctmt. isolation valve. Pen. P25.	
CS36	A 2	M-034 C-6	8 GT	MA NA	LC C	PAS LJ-R			CS pump test line Ctmt. isolation valve. Pen. P26.	
CS1530	A 2	M-034 D-7	8 GL	MO AI	C O/C	TO-Q TC-Q LJ-R PI-Y			CS pump discharge line Ctmt. Isolation valve. Pen. P26.	
CS1531	A 2	M-034 B-7	8 GL	MO AI	C O/C	TO-Q TC-Q LJ-R PI-Y			CS pump discharge line Ctmt. Isolation valve. Pen. P25.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: CONTAINMENT SPRAY

VALVE(S): CS9, CS10

CATEGORY: C

CLASS: 2

FUNCTION: Containment Spray Pump Discharge Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: To verify reverse flow closure of these valves downstream inline manual maintenance valves must be closed and an external source of water injected into the system through downstream line taps and test instrumentation installed on the system. To do this test during normal operation would disable one train of the containment spray system for an extended period of time, contrary to Technical Specification 3.6.2.1.

QUARTERLY TEST REMOTE TESTING: N/A

COLD SHUTDOWN TESTING: Verify reverse flow closure.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CONTAINMENT VACUUM RELIEF

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CV5070	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	
CV5071	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	
CV5072	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	
CV5073	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	
CV5074	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	
CV5075	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	
CV5076	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	
CV5077	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	
CV5078	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	
CV5079	A 2	M-0298 B-5	8 BF	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. vacuum breaker isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CONTAINMENT VACUUM RELIEF

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CV5080	AC 2	M-029B B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	
CV5081	AC 2	M-029B B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	
CV5082	AC 2	M-029B B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	
CV5083	AC 2	M-029B B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	
CV5084	AC 2	M-029B B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	
CV5085	AC 2	M-029B B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	
CV5086	AC 2	M-029B B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	
CV5087	AC 2	M-029B B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CONTAINMENT VACUUM RELIEF

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CV5088	AC 2	M-0298 B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	
CV5089	AC 2	M-0298 B-5	8 CK	SA NA	C O/C	VR-T RF-Q LJ-R	CS-1 RV-1	VR-T RF-R	Ctmt. vacuum relief valve. Set point verified as a relief valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: CONTAINMENT VACUUM RELIEF

VALVE(s): CV5080 THRU CV5089

CATEGORY: AC

CLASS: 2

FUNCTION: Containment Vacuum Relief Containment Isolation Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Within every 6 month period operability test shall be performed per ANSI/ASME OM-1-1981 section 1.3.4.3.a

COLD SHUTDOWN TEST JUSTIFICATION: To perform operability test of these valves will require personnel to enter the annulus. This area is located between the containment vessel and shield building. The annulus is a locked high radiation area that contains high neutron fields. To do this test during normal operation would violate ALARA concerns.

COLD SHUTDOWN TESTING: Manual stroke open and close to ensure operability.

RV-1

SYSTEM: CONTAINMENT VACUUM RELIEF

VALVE(s): CV5080 THRU CV5089

CATEGORY: AC

CLASS: 2

FUNCTION: Containment Vacuum Relief Containment Isolation Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse-flow closure.

BASIS FOR RELIEF: The only method available to verify reverse-flow closure is by valve leak testing during Appendix J, Type C, testing at refueling.

ALTERNATE TESTING: Reverse-flow closure will be verified during Appendix J, Type C, testing at refueling.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CORE FLOOD

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CF1A	B 2	M-034 J-3	14 GT	MO AI	O O/C	TO-Q TC-Q PI-Y	CS-1 CS-1	TO-C TC-C	Core Flood tank to RCS line block valve.	
CF1B	B 2	M-034 J-8	14 GT	MO AI	O O/C	TO-Q TC-Q PI-Y	CS-1 CS-1	TO-C TC-C	Core Flood tank to RCS line block valve.	
CF2A	A 2	M-034 J-5	1 GL	MO AI	LC C	TC-Q LJ-R PI-Y			Core Flood Tank drain Ctmt. isolation valve. Pen. P47A.	
CF2B	A 2	M-034 J-6	1 GL	MO AI	LC C	TC-Q LJ-R PI-Y			Core Flood Tank drain Ctmt. isolation valve. Pen. P47A.	
CF5A	A 2	M-034 G-4	1 GL	MO AI	LC C	PAS LJ-R PI-Y			Core Flood Tank vent line Ctmt. isolation valve. Pen. P47B.	
CF5B	A 2	M-034 G-6	1 GL	MO AI	LC C	PAS LJ-R PI-Y			Core Flood Tank vent line Ctmt. isolation valve. Pen. P47B.	
CF7A	C 2	M-034 G-3	1 X 2 RL	SA NA	C O	SR-T			Core Flood Tank safety relief valve.	
CF7B	C 2	M-034 G-8	1 X 2 RL	SA NA	C O	SR-T			Core Flood Tank safety relief valve.	
CF15	AC 2	M-034 G-3	1 SC	SA NA	C C	RF-Q LJ-R	RV-1	RF-R	Nitrogen and HPI Core Flood Tank fill line Ctmt. isolation valve. Pen. P44A.	
CF16	AC 2	M-034 G-9	1 SC	SA NA	C C	RF-Q LJ-R	RV-1	RF-R	Nitrogen and HPI Core Flood Tank fill line Ctmt. isolation valve. Pen. P71C.	
CF28	C 1	M-033B B-3	14 CK	SA NA	C O	FF-Q	RV-2	PCS	Core Flood Tank discharge check valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: CORE FLOOD

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
CF29	C 1	M-033B B-1	14 CK	SA NA	C O	FF-Q	RV-2	PCS	Core Flood Tank discharge check valve.	
CF30	AC 1	M-033B B-3	14 CK	SA NA	C O/C	FF-Q RF-Q LP-R	RV-2 VG-2 VG-2	PCS RF-C LP-C	Core Flood Tank/LPI injection common line check valve. See Sections III.3.16.	
CF31	AC 1	M-033B B-2	14 CK	SA NA	C O/C	FF-Q RF-Q LP-R	RV-2 VG-2 VG-2	PCS RF-C LP-C	Core Flood Tank/LPI injection common line check valve. See Sections III.3.16.	
CF1541	A 2	M-034 E-10	1 GL	AO C	O/C C	TC-Q FC-Q LJ-R PI-Y			Nitrogen and HPI Core Flood Tank fill line Ctmt. isolation valve. Pen. P44A.	
CF1542	A 2	M-034 E-11	1 GT	AO C	C C	TC-Q FC-Q LJ-R PI-Y			Core Flood Tank vent line Ctmt. isolation valve. Pen. P47B.	
CF1544	A 2	M-034 G-10	1 GL	AO C	O/C C	TC-Q FC-Q LJ-R PI-Y			Nitrogen and HPI Core Flood Tank fill line Ctmt. isolation valve. Pen. P71C.	
CF1545	A 2	M-034 F-10	1 GL	AO C	O/C C	TC-Q FC-Q LJ-R PI-Y			Core Flood Tank vent line Ctmt. isolation valve. Pen. P47A.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM:	CORE FLOOD
VALVE(s):	CF1A, CF1B
CATEGORY:	B
CLASS:	2
FUNCTION:	Core Flood Tank to RCS Line Block Valves.
ASME SECTION XI QUARTERLY TEST REQUIREMENTS:	Exercise and time.
COLD SHUTDOWN TEST JUSTIFICATION:	Each Core Flood Tank isolation valve opens automatically and is interlocked against closing whenever the Reactor Coolant System pressure exceeds 800 psig. To close these valves at power would cause one Core Flood train required by Technical Specification 4.5.1.a to be inoperable.
QUARTERLY PARTIAL STROKE TESTING:	N/A
COLD SHUTDOWN TESTING:	Exercise and time.

RELIEF REQUEST

RV-1

SYSTEM: CORE FLOOD

VALVE(s): CF15, CF16

CATEGORY: AC

CLASS: 2

FUNCTION: Nitrogen and Core Flood Tank Fill Line Containment Isolation Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse-flow closure.

BASIS FOR RELIEF: The only method available to verify reverse-flow closure is by valve leak testing during Appendix J, Type C, testing at refueling.

ALTERNATE TESTING: Reverse-flow closure will be verified during Appendix J, Type C, testing at refueling.

RELIEF REQUEST

RV-2

SYSTEM: CORE FLOOD

VALVE(s): CF28, CF29, CF30, CF31

CATEGORY: C

CLASS: 1

FUNCTION: Core Flood Tank Discharge Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify forward flow operability.

BASIS FOR RELIEF: The Core Flood Tanks are isolated from the RCS by these normally closed check valves. Each Core Flood Tank is charged with a nitrogen blanket at approximately 600 psig. This pressure is insufficient during operation to inject into the RCS. If these valves were to be exercised at cold shutdown, the contents of the tanks would be dumped into the RCS at the charged pressure which would interfere with RCS depressurization, inventory control, boron control, could result in overpressurization of the RCS and introduce the possibility of brittle fracture.

It is impractical to attempt to pass design flow rate through these valves. Estimated design flow rate is 3750 pound mass per second. This mass flow rate could destroy or damage core internals.

Core flood tank check valves are tested with reactor vessel head removed. Core flood tank pressure is adjusted to approximately 60 psig as determined per refueling canal level to ensure a repeatable test condition. Core flood tank isolation valves are cycled open. Flow rate (core flood tank level change) and valve differential pressures are recorded. This flow rate and differential pressure is correlated to the design flow rate. This alternative test would provide an acceptable level of quality and safety.

ALTERNATE TESTING: These valves will be forward flow tested at refueling when the reactor vessel head is removed and the core flood tanks can be dumped into the refueling canal. Valve differential pressure and level change is measured during

the dump test to verify that the valves passes a defined flow rate. Because accident flow rates can not be achieved, test flow rate and differential pressure are measured and correlated to verify flow is greater than or equal to the design base accident flow condition.

A partial forward flow test at cold shutdown will be performed for CF28, CF29, CF30, and CF31 using Core Flood Tank inventory at reduced Core Flood Tank and RCS pressure. A supplementary partial forward flow test at cold shutdown could also be performed for CF30 and CF31 using the normal Decay Heat removal system.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: DECAY HEAT REMOVAL

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
DH1A	B 2	M-033B B-6	10 GT	MO AI	LO O/C	TC-Q TO-Q PI-Y	CS-4 CS-4	TC-C TO-C	Heat exchanger discharge line block valve.	
DH1B	B 2	M-033B D-6	10 GT	MO AI	LO O/C	TC-Q TO-Q PI-Y	CS-4 CS-4	TC-C TO-C	Heat exchanger discharge line block valve.	
DH7A	B 2	M-033A D-11	14 GT	MO AI	LO O/C	TC-Q PI-Y	CS-6	TC-C	BWST to DH pump suction line block valve.	
DH7B	B 2	M-033A D-10	14 GT	MO AI	LO O/C	TC-Q PI-Y	CS-6	TC-C	BWST to DH pump suction line block valve.	
DH9A	B 2	M-033C K-3	14 GT	MO AI	C O/C	TO-Q TC-Q PI-Y	RV-1 RV-1	TO-R TC-R	DH/LHSI Ctmt. sump block valve.	
DH9B	B 2	M-033B K-6	14 GT	MO AI	C O/C	TO-Q TC-Q PI-Y	RV-1 RV-1	TO-R TC-R	DH/LHSI Ctmt. sump block valve.	
DH11	B 1	M-033B H-3	12 GT	MO AI	C O/C	TO-Q TC-Q PI-Y	CS-1 CS-1	TO-C TC-C	RCS letdown to DH sys. line block valve.	
DH12	B 1	M-033B H-2	12 GT	MO AI	C O/C	TO-Q TC-Q PI-Y	CS-1 CS-1	TO-C TC-C	RCS letdown to DH sys. line block valve.	
DH13A	B 2	M-033C F-10	6 BF	AO C	C C	TC-Q FC-Q PI-Y			Heat exchanger bypass flow control valve.	
DH13B	B 2	M-033B G-12	6 BF	AO C	C C	TC-Q FC-Q PI-Y			Heat exchanger bypass flow control valve.	
DH14A	B 2	M-033C C-9	10 BF	AO O	LO O	TO-Q FO-Q PI-Y			Heat exchanger outlet flow control valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: DECAY HEAT REMOVAL

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
DH148	B 2	M-033B E-11	10 BF	AO O	LO O	TO-Q FO-Q PI-Y			Heat exchanger outlet flow control valve.	
DH42	C 2	M-033C F-8	10 CK	SA NA	O/C O	FF-Q			DH pump discharge line check valve.	
DH43	C 2	M-033B G-10	10 CK	SA NA	O/C O	FF-Q			DH pump discharge line check valve.	
DH63	B 2	M-033B B-12	4 GT	MO AI	C O/C	TO-Q TC-Q PI-Y			DH supply to HPI pump suction line block valve.	
DH64	B 2	M-033B C-9	4 GT	MO AI	C O/C	TO-Q TC-Q PI-Y			DH supply to HPI pump suction line block valve.	
DH76	AC 1	M-033B B-3	10 SC	SA NA	LO/C O/C	FF-Q RF-Q LP-R	CS-3 VG-2	FF-C RF-C LP-C	DH injection to Reactor Vessel line check valve. See Sections III.3.16.	
DH77	AC 1	M-033B D-2	10 SC	SA NA	LO/C O/C	FF-Q RF-Q LP-R	CS-3 VG-2	FF-C RF-C LP-C	DH injection to Reactor Vessel line check valve. See Sections III.3.16.	
DH81	C 2	M-033A H-10	14 CK	SA NA	O/C O	FF-Q	CS-7	PQCS	BWST to DH pump suction line check valve.	
DH82	C 2	M-033A F-11	14 CK	SA NA	O/C O	FF-Q	CS-7	PQCS	BWST to DH pump suction line check valve.	
DH87	A 2	M-033B D-6	8 GT	MA NA	LC C	PAS LJ-R			Ctmt. isolation valve. Pen. P49.	
DH88	A 2	M-033B D-5	8 GT	MA NA	LC C	PAS LJ-R			Ctmt. isolation valve. Pen. P49.	
DH125	C 2	M-033C D-9	8 SC	SA NA	LO/C O/C	FF-Q RF-Q	CS-2 CS-2	FF-C RF-C	DH train cross-tie line check valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: DECAY HEAT REMOVAL

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
DH126	C 2	M-033C D-9	8 CK	SA NA	C O/C	FF-Q RF-Q	CS-2 CS-2	FF-C RF-C	DH train cross-tie line check valve.	
DH127	C 2	M-033B F-11	8 SC	SA NA	LO/C O/C	FF-Q RF-Q	CS-2 CS-2	FF-C RF-C	DH train cross-tie line check valve.	
DH128	C 2	M-033B F-11	8 CK	SA NA	C O/C	FF-Q RF-Q	CS-2 CS-2	FF-C RF-C	DH train cross-tie line check valve.	
DH830	B 2	M-033C D-9	8 GT	MO AI	LC O/C	TO-Q TC-Q PI-Y			DH train cross-tie line block valve.	
DH831	B 2	M-033B F-11	8 GT	MO AI	LC O/C	TO-Q TC-Q PI-Y			DH train cross-tie line block valve.	
DH1508	C 2	M-033B J-7	.75 x 1 RL	SA NA	C O	SR-T			DH pump suction line relief valve.	
DH1509	C 2	M-033C H-4	.75 x 1 RL	SA NA	C O	SR-T			DH pump suction line relief valve.	
DH1517	B 2	M-033B G-6	12 GT	MO AI	C O/C	TO-Q TC-Q PI-Y			DH pump suction line block valve.	
DH1518	B 2	M-033C F-3	12 GT	MO AI	C O/C	TO-Q TC-Q PI-Y			DH pump suction line block valve.	
DH1529	C 2	M-033B D-8	1.5 x 2 RL	SA NA	C O	SR-T			DH pump discharge line relief valve.	
DH1550	C 2	M-033B A-11	1.5 x 2 RL	SA NA	C O	SR-T			DH pump discharge line relief valve.	
DH2733	B 2	M-033B J-8	18 GT	MO AI	LO O/C	TC-Q TO-Q PI-Y			BWST to DH pump suction line block valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: DECAY HEAT REMOVAL

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
DH2734	B 2	M-033C H-6	18 GT	MO AI	LO O/C	TC-Q TO-Q PI-Y			BWST to DH pump suction line block valve.	
DH2735	A 1	M-033B A-4	1.5 GT	MO AI	LC O/C	TO-Q TC-Q LC-R PI-Y	CS-5 CS-5	TO-C TC-C LC-R	Aux. spray line Ctmt. isolation valve. Pen. P74C.	
DH2736	A 2	M-033B B-5	1.5 GL	MO AI	LC O/C	TO-Q TC-Q LC-R PI-Y	CS-5 CS-5	TO-C TC-C LC-R	Aux. spray line Ctmt. isolation valve. Pen. P74C.	
DH4849	C 2	M-033B H-5	4 X 6 RL	SA NA	C O	SR-T			RCS letdown line relief valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: DECAY HEAT

VALVE(s): DH11, DH12

CATEGORY: B

CLASS: 1

FUNCTION: RCS to Decay Heat System Isolation Valves.

ASME SECTION XI
QUARTERLY TEST
REQUIREMENT: Exercise and time.

COLD SHUTDOWN TEST
JUSTIFICATION: These valves isolate the low pressure Decay Heat System from the high pressure RCS. They are interlocked to prevent opening when RCS pressure is greater than 301 psig and automatically close before RCS pressure exceeds 301 psig.

QUARTERLY PARTIAL
STROKE TESTING: N/A

COLD SHUTDOWN
TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-2

SYSTEM: DECAY HEAT

VALVE(s): DH125, DH126, DH127, DH128

CATEGORY: C

CLASS: 2

FUNCTION: Decay Heat System Train Cross-Connect Line Check Valves.

ASME SECTION XI
QUARTERLY TEST
REQUIREMENTS: Verify forward flow operability.
Verify reverse flow closure.

COLD SHUTDOWN TEST
JUSTIFICATION: In order to verify forward flow operability it is necessary to establish flow through the cross-connect line and to measure the flow rate. This test would required cross connecting both essential lines. In order to verify reverse flow the standby Decay Heat Pump must be isolated. These test conditions are unanalyzed and would violate T.S. 3.5.2.b. since both redundant trains would be inoperable.

DH125 and DH126, or DH127 and DH128 will be reverse flow tested in series as one valve since there are no means to individually test these.

QUARTERLY PARTIAL
STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Forward flow operability will be verified at cold shutdown when flow through the cross-connect line can be initiated and the flow rate into the Reactor Coolant System measured.

Reverse flow closure will be verified during cold shutdown when the redundant Decay Heat Pump can be isolated.

COLD SHUTDOWN TEST JUSTIFICATION

CS-3

SYSTEM: DECAY HEAT

VALVE(s): DH76, DH77

CATEGORY: AC

CLASS: 1

FUNCTION: Decay Heat to Reactor Coolant System Hot Leg Injection Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify forward flow operability.

COLD SHUTDOWN TEST JUSTIFICATION: The only possible way to verify full flow operability of these check valves is by using the Decay Heat pumps to inject into the RCS. During normal operation the Decay Heat pumps cannot overcome RCS operating pressure.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: These valves will be forward flow operability tested with flow from the Decay Heat pumps. The design flow rate through each valve will be verified.

COLD SHUTDOWN TEST JUSTIFICATION

CS-4

SYSTEM: DECAY HEAT

VALVE(s): DH1A, DH1B

CATEGORY: B

CLASS: 2

FUNCTION: Decay Heat Pump Discharge to RCS Isolation Valves.

ASME SECTION XI
QUARTERLY TEST
REQUIREMENT: Exercise and time.

COLD SHUTDOWN TEST
JUSTIFICATION: During normal operation these valves are aligned to their accident position which is open. To close these valves for testing purposes unnecessarily places the plant in an unsafe condition. If these valves did not reopen following testing, it would render that portion of Low Pressure Safety Injection inoperable.

QUARTERLY PARTIAL
STROKE TESTING: N/A

COLD SHUTDOWN
TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-5

SYSTEM: DECAY HEAT

VALVE(s): DH2735, DH2736

CATEGORY: A

CLASS: 1 (DH2735) 2 (DH2736)

FUNCTION: Decay Heat Auxiliary Spray Line Isolation Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: These valves provide a boundary between the high pressure RCS and the low pressure Decay Heat System. There are no design provisions to measure line pressure between the two valves. If either valve is exercised and the other valve fails to provide a leak tight boundary, the low pressure Decay Heat System could be overpressurized or if the inline valve was inadvertently opened during testing, an inter-system-loss-of-coolant accident could occur.

QUARTERLY PARTIAL STROKE TESTING: Partial stroke exercising is precluded for the same reasons as full-stroke exercising.

COLD SHUTDOWN TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-6

SYSTEM: DECAY HEAT

VALVE(s): DH7A, DH7B

CATEGORY: B

CLASS: 2

FUNCTION: BWST Outlet Header Isolation Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: Exercising these valves closed during normal operation isolates Borated Water Storage Tank flow path to one train of the High Pressure Injection, Low Pressure Injection, Containment Spray, and Makeup Systems. Blocking the BWST flow path to one train of these four safety-related systems during normal operation could place the plant in an unanalyzed condition. These systems are required by Technical Specifications and with closing DH7A or DH7B causes one train of these systems to be inoperable.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on initiation and cannot be partial-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-7

SYSTEM: DECAY HEAT REMOVAL

VALVE(s): DH81, DH82

CATEGORY: B

CLASS: 2

FUNCTION: BWST to DH/LPI Pump and Containment Spray Pumps Suction Line Check Valves

ASME SECTION XI
QUARTERLY TEST
REQUIREMENT: Verify forward flow operability.

COLD SHUTDOWN TEST
JUSTIFICATION: DH81 and DH82 are suction check valves to both the Decay Heat pump and the Containment Spray pump. A flow rate of 4300 gpm is required to verify full open. Total flow requirement is 3000 gpm for the Decay Heat pump and 1300 gpm for the Containment Spray pump.

To obtain 4300 gpm through the check valves both the Decay Heat pump and Containment Spray pump must be run at the same time. An increased risk for equipment damage or system inoperability may occur due to the complications of multiple pump test lineups and emergency restoration actions. This abnormal test condition makes both pumps on the same train inoperable.

Partial flow is observed through these check valves for both the Containment Spray pump quarterly test and Decay Heat pump quarterly test.

QUARTERLY PARTIAL
STROKE TESTING: Partial forward flow test during the Decay Heat Pump quarterly test.

COLD SHUTDOWN
TESTING: Full forward flow test.

RELIEF REQUEST

RV-1

SYSTEM: DECAY HEAT REMOVAL

VALVE(s): DH9A, DH9B

CATEGORY: B

CLASS: 2

FUNCTION: Decay Heat/LHI Containment Sump Block Valves.

ASME SECTION XI
QUARTERLY TEST
REQUIREMENTS: Exercise and time.

BASIS FOR
RELIEF: DH9A and DH9B are the emergency sump isolation valves providing suction to the low pressure injection (LPI)/decay heat (DH) pumps and containment spray (CS) pumps during the recirculation phase following a postulated a loss of coolant accident. The LPI/DH pump and CS pumps suctions are also connected to the borated water storage tank (BWST) via the normally open BWST isolation valves DH7A and DH7B.

During normal operation, DH9A and DH9B are deenergized in the closed position to address 10 CFR 50 Appendix R fire protection concerns. DH9A and DH9B are also interlocked with DH7A and DH7B and BWST level. On low-low BWST level, the interlock permits the operator to open DH9A and DH9B. Once these valves begin to open the interlock signals DH7A and DH7B to close.

Cycling of DH9A and DH9B to accomplish the required Code testing during normal plant operation would require isolation of the BWST, the source of emergency cooling system water, defeating the interlocks to permit opening of DH9A and DH9B, and reenergization of power to DH9A and DH9B contrary to fire protection commitments. Closure of DH7A and DH7B to isolate the BWST would also place additional reliance on these valves to open on a safety actuation signal should a LOCA occur during this evolution. This is not the normal plant configuration assumed as an initial condition in the safety analysis.

Cycling of DH9A or DH9B would introduce water into the containment emergency sump since the downstream decay heat system piping is full of water even if the BWST is isolated. Consequently, DH9A and DH9B can only be tested when blank flanges can be installed in the containment

sump upstream of DH9A and DH9B to prevent water from the decay heat piping from flowing into the sump when the valves are opened. Even at that, the water trapped between the valves and the flanges will drain into the sump when the flanges are removed. Blank flanges cannot be installed during normal plant operation because the containment emergency sump is inaccessible and installation of a flange would render the affected emergency core cooling train inoperable.

Even during cold shutdown, installation of the flanges, and restoring the sump to operational readiness and filling and venting drained sections of piping, presents a significant burden to accomplish during a non-refueling outage cold shutdown. The emergency sump debris screens must be removed. The sump is a contaminated area. Removal of the flanges and draining of the water trapped between the flanges and the valves provides additional opportunity for personnel contamination. These factors in combination with the need to defeat interlocks, the pressures of time associated with non-refueling outage cold shutdowns, and risk associated with potential errors as identified in NRC Information Notice 91-22 (Log Number 1-2453 dated March 19, 1991) are significant liabilities when compared with the minimal benefits of performing testing during cold shutdown.

The ASME Code Section XI requirements for testing of DH9A and DH9B have not changed from the 1977 Edition with addenda through summer of 1978, the basis for the first ten year interval IST program. Nor has the burden associated with testing DH9A and DH9B at cold shutdown. In the evaluation of the first ten year interval IST program, the NRC concluded that the benefit to be gained by testing DH9A and DH9B at cold shutdown does not warrant the burden and this same relief request for testing during refueling was approved for the first 10-year interval by NRC letter to Toledo Edison dated May 18, 1984 (Log Number 1521).

ALTERNATE
TESTING: Exercise and time each refueling.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: DEMINERALIZED WATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
DW2643	B 3	M-036A C-11	1 GL	AO C	O/C C	TC-Q FC-Q PI-Y			DW makeup to CCW Surge Tank line isolation valve.	
DW6831A	A 2	M-010C K-5	4 GT	AO C	O C	TC-Q FC-Q LJ-R PI-Y			DW supply line Ctmt. isolation valve.	
DW6831B	A 2	M-010C K-4	4 GT	AO C	O C	TC-Q FC-Q LJ-R PI-Y			DW supply line Ctmt. isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: DIESEL GENERATOR AIR START

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
DA2	C -	M-017B J-10	1.5 CK	SA	C C	RF-Q			Relay air valve relief flow path for DA63.	
DA3	C -	M-017B G-10	1.5 CK	SA	C C	RF-Q			Relay air valve relief flow path for DA62.	
DA10	C -	M-017B E-10	1.5 CK	SA	C C	RF-Q			Relay air valve relief flow path for DA61.	
DA11	C -	M-017B C-10	1.5 CK	SA	C C	RF-Q			Relay air valve relief flow path for DA60.	
DA24	C 3	M-017B C-5	.75 CK	SA NA	O/C C	RF-Q			DG air start compressor to air receiver tank line check valve.	
DA25	C 3	M-017B G-5	.75 CK	SA NA	O/C C	RF-Q			DG air start compressor to air receiver tank line check valve.	
DA38	C 3	M-017B E-5	.75 CK	SA NA	O/C C	RF-Q			DG air start compressor to air receiver tank line check valve.	
DA39	C 3	M-017B J-5	.75 CK	SA NA	O/C C	RF-Q			DG air start compressor to air receiver tank line check valve.	
DA1135	C 3	M-017B C-6	.75X.75 RL	SA NA	C O	SR-T			Air start receiver tank relief valve.	
DA1138	C 3	M-017B D-6	.75X.75 RL	SA NA	C O	SR-T			Air start receiver tank relief valve.	
DA1141	C 3	M-017B G-6	.75X.75 RL	SA NA	C O	SR-T			Air start receiver tank relief valve.	
DA1144	C 3	M-017B H-6	.75X.75 RL	SA NA	C O	SR-T			Air start receiver tank relief valve.	
JA1147A	B -	M-017B D-10	-- GT	SO C	C O	TO-Q	RV-1	SO-Q	DG air start line solenoid valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: DIESEL GENERATOR AIR START

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
DA1147B	B -	M-017B E-10	-- GT	SO C	C O	TO-Q	RV-1	SO-Q	DG air start line solenoid valve.	
DA1148A	B -	M-017B H-10	-- GT	SO C	C O	TO-Q	RV-1	SO-Q	DG air start line solenoid valve.	
DA1148B	B -	M-017B J-10	-- GT	SO C	C O	TO-Q	RV-1	SO-Q	DG air start line solenoid valve.	

RELIEF REQUEST

RV-1

SYSTEM: DIESEL GENERATOR AIR START

VALVE: DA1147A, DA1147B, DA1148A, DA1148B

CATEGORY: B

CLASS: -

FUNCTION: Diesel Generator Air Start Solenoid Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Measure stroke time.

BASIS FOR RELIEF: These are three-way solenoid valves mounted on the Diesel Generator (DG) skid mounted package. They are in the DG air start line between the Air Receiver Tanks and the Air Start Manifolds. Since each generator has two tanks and two manifolds, the DG may start on air supplied by either or both tanks. The diesel generator test procedure verifies operability of each of these valves independently on an alternating basis by isolating one air start header and starting the DG from one header at a time. Stroke time cannot be measured because there are no position indicators and visual observation is not possible due to valve design. The DG start test is performed more frequently than required by Section XI so that actual valve testing criteria is more limiting than Section XI requirements.

ALTERNATE TESTING: These valves will be tested as part of the diesel generator air start test. Diesel generator starting will be used to verify valve operability.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: FEEDWATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
FW147	C -	M-007B E-11	18 CK	SA NA	O C	RF-Q	CS-1	RF-C	FW line check valve.	
FW156	C -	M-007B E-3	18 CK	SA NA	O C	RF-Q	CS-1	RF-C	FW line check valve.	
FW601	B 2	M-007B E-2	18 GT	MO AI	O C	TC-Q PI-Y	CS-2	TC-C	FW Ctmt. isolation valve.	
FW612	B 2	M-007B E-12	18 GT	MO AI	O C	TC-Q PI-Y	CS-2	TC-C	FW Ctmt. isolation valve.	
SP6A	B -	M-007B E-4	16 AN	AO C	O C	TC-Q PI-Y	CS-2	TC-C	FW to SG main flow control valve.	
SP6B	B -	M-007B E-9	16 AN	AO C	O C	TC-Q PI-Y	CS-2	TC-C	FW to SG main flow control valve.	
SP7A	B -	M-007B H-4	6 GL	AO C	O C	TC-Q PI-Y	CS-3	TC-C	FW to SG line startup flow control valve.	
SP7B	B -	M-007B H-9	6 GL	AO C	O C	TC-Q PI-Y	CS-3	TC-C	FW to SG line startup flow control valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: FEEDWATER

VALVE(s): FW147, FW156

CATEGORY: C

CLASS: -

FUNCTION: Feedwater to Steam Generator Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: Verification of reverse flow closure requires termination of feedwater flow to the associated steam generator. Termination of feedwater flow to a steam generator during normal operation is not possible.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION

CS-2

SYSTEM: FEEDWATER

VALVE(s): FW601, FW612, SP6A, SP6B

CATEGORY: B

CLASS: - (SP6A, SP6B)
2 (FW601, FW612)

FUNCTION: Feedwater Containment Isolation (FW601, FW612) and Main Control (SP6A, SP6B) valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time (FW601, FW612)
Exercise, time and fail (SP6A, SP6B)

COLD SHUTDOWN TEST JUSTIFICATION: Exercising these valves closed during normal operation would result in a loss of Feedwater to the associated Steam Generator. Isolation of Feedwater flow during normal operation is not possible.

QUARTERLY PARTIAL STROKE TESTING: Valves full stroke on initiation and cannot be partial-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time (FW601, FW612).
Exercise and time (SP6A, SP6B).

COLD SHUTDOWN TEST JUSTIFICATION

CS-3

SYSTEM: FEEDWATER

VALVE(s): SP7A, SP7B

CATEGORY: B

CLASS: -

FUNCTION: Feedwater to Steam Generator Startup Control Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise, time and fail.

COLD SHUTDOWN TEST JUSTIFICATION: These valves are maintained open during normal operation when feedwater flow is above 15% of unit full load. Exercising the valves closed at unit loads above 15% causes a system operating transient which could result in a forced plant shutdown.

QUARTERLY PARTIAL STROKE TESTING: Valves full stroke close on safety initiation and cannot be partial-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: GASEOUS RADIOACTIVE WASTE

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
WG1823	B 3	M-038B E-10	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank inlet line isolation valve.	
WG1824	B 3	M-038B E-9	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank inlet line isolation valve.	
WG1825	B 3	M-038B E-11	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank inlet line isolation valve.	
WG1826	B 3	M-038B E-12	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank inlet line isolation valve.	
WG1827	B 3	M-038B E-13	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank inlet line isolation valve.	
WG1828	B 3	M-038B E-14	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank inlet line isolation valve.	
WG1829	C 3	M-038B E-10	1.5X2 RL	SA NA	C O	SR-T			WG Decay Tank relief valve.	
WG1831	C 3	M-038B E-11	1.5X2 RL	SA NA	C O	SR-T			WG Deay Tank relief valve.	
WG1833	C 3	M-038B E-13	1.5X2 RL	SA NA	C O	SR-T			WG Decay Tank relief valve.	
WG1835	B 3	M-038C G-2	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank outlet line isolation valve.	
WG1836	B 3	M-038C G-3	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank outlet line isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: GASEOUS RADIOACTIVE WASTE

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
WG1837	B 3	M-038C G-4	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank outlet line isolation valve.	
WG1838	B 3	M-038C G-5	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank outlet line isoaltion valve.	
WG1839	B 3	M-038C G-6	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank outlet line isolation valve.	
WG1840	B 3	M-038C G-7	1 DA	AO C	O/C C	TC-Q FC-Q PI-Y			WG Decay Tank outlet line isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: HIGH PRESSURE INJECTION

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
HP2A	B 2	M-033A E-3	2.5 GL	MO AI	C O/C	TO-Q TC-Q PI-Y			HPI to RCS injection line isolation valve.	
HP2B	B 2	M-033A F-3	2.5 GL	MO AI	C O/C	TO-Q TC-Q PI-Y			HPI to RCS injection line isolation valve.	
HP2C	B 2	M-033A H-3	2.5 GL	MO AI	C O/C	TO-Q TC-Q PI-Y			HPI to RCS injection line isolation valve.	
HP2D	B 2	M-033A J-3	2.5 GL	MO AI	C O/C	TO-Q TC-Q PI-Y			HPI to RCS injection line isolation valve.	
HP10	C 2	M-033A H-9	6 CK	SA NA	O/C O/C	FF-Q RF-Q	RV-2 CS-1	PQR RF-C	BWST to HPI pump suction line check valve.	
HP11	C 2	M-033A E-11	6 CK	SA NA	O/C O/C	FF-Q RF-Q	RV-2 CS-1	PQR RF-C	BWST to HPI pump suction line check valve.	
HP22	C 2	M-033A H-6	4 CK	SA NA	C O	FF-Q	RV-2	PQR	HPI pump discharge line check valve.	
HP23	C 2	M-033A E-6	4 CK	SA NA	C O	FF-Q	RV-2	PQR	HPI pump discharge line check valve.	
HP31	BC 2	M-033A D-6	1.5 SC	SA MO	LO/C O/C	FF-Q TC-Q PI-Y			HPI pump min. flow line stop check valve.	
HP32	BC 2	M-033A K-6	1.5 SC	SA MO	LO/C O/C	FF-Q TC-Q PI-Y			HPI pump min. flow line stop check valve.	
HP33	C 2	M-033A B-6	3 CK	SA NA	C O	FF-Q			HPI pump min. flow line check valve.	
HP48	C 1	M-033A K-2	2.5 SC	SA NA	LO/C O	FF-Q	RV-1	FF-R	HPI/MU pump feed & bleed to RCS injection line manual stop check valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: HIGH PRESSURE INJECTION

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
HP49	C 1	M-033A J-2	2.5 SC	SA NA	LO/C O	FF-Q	RV-1	FF-R	HPI/MU pump feed & bleed to RCS injection line manual stop check valve.	
HP50	C 1	M-033A H-2	2.5 CK	SA NA	C O/C	FF-Q	RV-1	FF-R	HPI/MU pump feed & bleed to RCS injection line check valve.	
HP51	C 1	M-033A J-2	2.5 CK	SA NA	C O	FF-Q	RV-1	FF-R	HPI/MU pump feed & bleed to RCS injection line check valve.	
HP56	C 1	M-033A F-2	2.5 SC	SA NA	LO/C O	FF-Q	RV-1	PQR	HPI/MU pump feed & bleed to RCS inj. line manual stop check valve. Part stroke tested quarterly by normal makeup flow.	
HP57	C 1	M-033A E-2	2.5 SC	SA NA	LO/O O	FF-Q	RV-1	FF-R	HPI/MU pump feed & bleed to RCS inj. line manual stop check valve.	
HP58	C 1	M-033A F-2	2.5 CK	SA NA	C O	FF-Q	RV-1	PQR	HPI/MU pump feed & bleed to RCS injection line check valve. Part stroke tested quarterly by normal makeup flow.	
HP59	C 1	M-033A E-2	2.5 CK	SA NA	O O	FF-Q	RV-1	FF-R	HPI/MU pump feed & bleed to RCS inj. line manual stop check valve.	
HP102	C 3	M-033A C-1	.5 CK	SA NA	O/C O/C	FF-Q RF-Q			HPI 1 AC lube oil pump discharge valve.	
HP105	C 3	M-033A B-2	.5 CK	SA NA	O/C O/C	FF-Q RF-Q			HPI 2 AC lube oil pump discharge valve.	
HP202	C 3	M-033A C-1	.5 CK	SA NA	O/C O/C	FF-Q RF-Q			HPI 1 DC lube oil pump discharge valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: HIGH PRESSURE INJECTION

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
HP205	C 3	M-033A B-2	.5 CK	SA NA	O/C O/C	FF-Q RF-Q			HPI 2 DC lube oil pump discharge valve.	
HP1510	C 2	M-033A H-8	1.5X1.5 RL	SA NA	C O	SR-T			HPI pump suction line relief valve.	
HP1511	C 2	M-033A E-8	1.5X1.5 RL	SA NA	C O	SR-T			HPI pump suction line relief valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: HIGH PRESSURE INJECTION

VALVE(s): HP10, HP11

CATEGORY: C

CLASS: 2

FUNCTION: HPI Pump Inlet Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: To verify reverse flow closure requires isolation of one Borated Water Storage Tank header. Isolation of a Borated Water Storage Tank header isolates the normal flow paths to one loop of the High Pressure Injection, Decay Heat, Makeup, and Containment Spray Systems The extended period of time required for system isolation and testing would violate Technical Specification 3.5.2 action statements.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Verify reverse flow closure.

RELIEF REQUEST

RV-1

SYSTEM: HIGH PRESSURE INJECTION

VALVE(s): HP48, HP49, HP50, HP51, HP56, HP57, HP58, HP59

CATEGORY: C

CLASS: 1

FUNCTION: HPI to RCS Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify forward flow operability.

BASIS FOR RELIEF: Verification of forward flow operability can only be performed by injecting HPI pump flow directly into the Reactor Coolant System. The HPI pumps have insufficient head to overcome normal RCS operating pressure for a full or partial flow test. Verification of full design flow rate cannot be done at cold shutdown due to back pressure from the RCS and potential for low temperature over-pressurization of the RCS. Verification of full flow operability can only be done at refueling with the RCS depressurized.

ALTERNATE TESTING: Forward flow operability will be verified by full flow testing at refueling.

HP56 and HP58, normal makeup injection line will be partial forward flow tested each quarter.

RELIEF REQUEST

RV-2

SYSTEM: HIGH PRESSURE INJECTION

VALVE(S): HP10, HP11, HP22, HP23

CATEGORY: C

CLASS: 2

FUNCTION: High Pressure Injection Pump Suction and Discharge Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify forward flow operability.

BASIS FOR RELIEF: The only possible way to verify forward flow operability during normal operation is by flow measurement during quarterly pump testing through an flow orificed, three-inch pump test recirculation line back to the Borated Water Storage Tank. The pump test flow rate is approximately 290 gpm. The design accident flow rate for these valves is approximately 600 gpm. the only flow path that can be used to perform a full flow test would inject HPI pump flow directly into the Reactor Coolant System. Full flow testing can only be done at refueling (see RV-1).

ALTERNATE TESTING: The valves will be partial forward flow operability verified quarterly during pump testing and full forward flow tested at refueling with the RCS depressurized.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: HVAC-RADWASTE, FUEL HANDLING, & ACCESS CONTROL AREA

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
HV5439	B 3	M-0288 H-5	12 BF	MO AI	O C	TC-Q PI-Y			HVAC isolation valve.	
HV5440	B 3	M-0288 H-5	36 BF	MO AI	O C	TC-Q PI-Y			HVAC isolation valve.	
HV5441	B 3	M-0288 H-6	20 BF	MO AI	O C	TC-Q PI-Y			HVAC isolation valve.	
HV5442	B 3	M-0288 H-7	20 BF	MO AI	O C	TC-Q PI-Y			HVAC isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: INSTRUMENT AIR

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
IA501	AC 2	M-015A F-3	1 CK	SA NA	O C	RF-Q LJ-R	RV-1	RF-R LJ-R	IA to Ctmt. isolation valve.	
IA2011	A 2	M-015A F-2	1 GT	AO C	O C	TC-Q FC-Q LJ-R PI-Y			IA to Ctmt. isolation valve.	

RELIEF REQUEST

RV-1

SYSTEM: INSTRUMENT AIR

VALVE(s): IA501

CATEGORY: AC

CLASS: 2

FUNCTION: Instrument Air Supply Containment Isolation Check Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse-flow closure.

BASIS FOR RELIEF: The only method available to verify reverse-flow closure is by valve leak testing during Appendix J, Type C, testing at refueling.

ALTERNATE TESTING: Reverse-flow closure will be verified during Appendix J, Type C, testing at refueling.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: MAIN STEAM

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
ICS11A	B 2	M-007A C-7	8 AN	AO C	C O/C	TO-Q TC-Q FC-Q PI-Y	CS-2 CS-2 CS-2	TO-C TC-C FC-C	MS atmospheric vent valve.	
ICS11B	B 2	M-007B C-9	8 AN	AO C	C O/C	TO-Q TC-Q FC-Q PI-Y	CS-2 CS-2 CS-2	TO-C TC-C FC-C	MS atmospheric vent valve.	
MS100	BC 2	M-003A F-7	36 SC	AO SA	O C	TC-Q FC-Q PI-Y	CS-5 CS-5	TC-C FC-C	MS isolation valve.	
MS100-1	B 2	M-003A F-7	2 GL	AO C	C C	TC-Q FC-Q PI-Y	CS-7 CS-7	TC-C FC-C	MS isolation valve bypass line isolation valve.	
MS101	BC 2	M-003A C-7	36 SC	AO SA	O C	TC-Q FC-Q PI-Y	CS-5 CS-5	TC-C FC-C	MS isolation valve.	
MS101-1	B 2	M-003A C-7	2 GL	AO C	C C	TC-Q FC-Q PI-Y	CS-7 CS-7	TC-C FC-C	MS isolation valve bypass line isolation valve.	
MS105	B 2	M-003C E-5	6 GT	MO AI	C O/C	TO-Q TC-Q PI-Y			MS to AFW turbine line block valve.	
MS106A	B 2	M-003C F-6	6 GT	MO AI	O O/C	TC-Q TO-Q PI-Y			MS to AFW turbine cross-tie line block valve.	
MS107	B 2	M-003C E-9	6 GT	MO AI	C O/C	TO-Q TC-Q PI-Y			MS to AFW turbine line block valve.	
MS107A	B 2	M-003C F-8	6 GT	MO AI	O O/C	TC-Q TO-Q PI-Y			MS to AFW turbine cross-tie line block valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: MAIN STEAM

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	COLD TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
MS209	C -	M-003A F-6	36 CK	SA NA	O C	RF-Q	CS-1	RF-C	MS non-return check valve.	
MS210	C -	M-003A C-6	36 CK	SA NA	O C	RF-Q	CS-1	RF-C	MS non-return check valve.	
MS375	B 2	M-003A G-10	1.5 GT	AO C	C C	TC-Q FC-Q PI-Y	CS-4 CS-4	TC-C FC-C	MS trap warmup drain line isolation valve.	
MS394	B 2	M-003A D-10	1.5 GT	AO C	C C	TC-Q FC-Q PI-Y	CS-4 CS-4	TC-C FC-C	MS trap warmup drain line isolation valve.	
MS603	B 2	M-007B H-1	4 GT	MO AI	C C	TC-Q PI-Y	CS-6	TC-C	SG blowdown line isolation valve.	
MS611	B 2	M-007B H-12	4 GT	MO AI	C C	TC-Q PI-Y	CS-6	TC-C	SG blowdown line isolation valve.	
MS726	C 3	M-003C F-5	6 CK	SA NA	C O/C	FF-Q RF-Q	GL-1	RM	MS to AFW pump turbine line check valve.	
MS727	C 3	M-003C F-9	6 CK	SA NA	C O/C	FF-Q RF-Q	GL-1	RM	MS to AFW pump turbine line check valve.	
MS734	C 3	M-003C F-5	6 CK	SA NA	C O/C	FF-Q RF-Q	CS-3	RF-C	MS to AFW pump turbine cross-tie line check valve.	
MS735	C 3	M-003C F-9	6 CK	SA NA	C O/C	FF-Q RF-Q	CS-3	RF-C	MS To AFW pump turbine cross-tie line check valve.	
MS5889A	B 3	M-003C G-4	4 GT	AO O	C O	TO-Q FO-Q PI-Y			AFW pump turbine steam admission valve.	
MS5889B	B 3	M-003C G-9	4 GT	AO O	C O	TO-Q FO-Q PI-Y			AFW pump turbine steam admission valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: MAIN STEAM

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
SP17A1	C 2	M-007A A-7	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17A2	C 2	M-007A B-7	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17A3	C 2	M-007A B-5	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17A4	C 2	M-007A A-6	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17A5	C 2	M-007A B-6	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17A6	C 2	M-007A A-6	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17A7	C 2	M-007A B-6	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17A8	C 2	M-007A B-5	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17A9	C 2	M-007A A-5	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17B1	C 2	M-007A A-9	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17B2	C 2	M-007A B-9	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17B3	C 2	M-007A B-10	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17B4	C 2	M-007A A-10	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17B5	C 2	M-007A B-9	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: MAIN STEAM

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
SP17B6	C 2	M-007A A-9	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17B7	C 2	M-007A B-9	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17B8	C 2	M-007A B-10	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	
SP17B9	C 2	M-007A A-10	6 X 6 RL	SA NA	C O	SR-T			MS safety relief valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-2

SYSTEM: MAIN STEAM

VALVE(s): 1CS11A, 1CS11B

CATEGORY: B

CLASS: 2

FUNCTION: Main Steam Atmospheric Vent Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Exercise, time, and fail.

COLD SHUTDOWN TEST JUSTIFICATION: Exercising these valves during normal operation would cause a decrease in main steam line pressure and would cause a pressure transient. Failure in an open position would result in a plant shutdown due to a mismatch between feedwater and main steam flow.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Exercise, time, and fail.

COLD SHUTDOWN TEST JUSTIFICATION

CS-3

SYSTEM: MAIN STEAM

VALVE(s): MS734, MS735

CATEGORY: C

CLASS: 3

FUNCTION: Maintains integrity of AFPT steam supply system. Prevents normal auxiliary steam source from reverse flow and entering the backup auxiliary steam supply source.

ASME SECTION XI
QUARTERLY TEST
REQUIREMENTS: Verify reverse flow closure.

COLD SHUTDOWN TEST
JUSTIFICATION: Quarterly reverse flow testing is inaccurate because the test isolation valves leak by. Extended time for testing could exceed Technical Specification 3.7.1.2 action statement(s), Two independent steam generator auxiliary feedwater pumps and associated paths. Testing these valves at power is dangerous since normal system pressure and temperature is approximately 870 psig and 590 degrees respectively.

QUARTERLY PARTIAL
STROKE TESTING: N/A

COLD SHUTDOWN
TESTING: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION

CS-4

SYSTEM: MAIN STEAM

VALVE(s): MS375, MS394

CATEGORY: B

CLASS: 2

FUNCTION: Main Steam Trap Warm Up Line Isolation valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise, time and fail.

COLD SHUTDOWN TEST JUSTIFICATION: These valves are in the Main Steam trap warm up drain lines and are maintained closed during normal operation. Valves are only open during plant startup to drain condensed steam from the Main Steam traps. Opening these valves with normal operating steam conditions would result in extensive damage to the downstream line pipe which is not designed for high temperature and pressure steam flow. If the valves failed to reclose, the plant would be forced to shutdown.

QUARTERLY PART STROKE TESTING: Valves full stroke on initiation and cannot be part stroke exercised.

COLD SHUTDOWN TESTING: Exercise, time, fail.

COLD SHUTDOWN TEST JUSTIFICATION

CS-5

SYSTEM: MAIN STEAM

VALVE(s): MS100, MS101

CATEGORY: BC

CLASS: 2

FUNCTION: Main Steam Isolation Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise, time, and fail.

COLD SHUTDOWN TEST JUSTIFICATION: Exercising these valves during normal operation isolates one line of steam flow to the turbine which would cause a severe pressure transient in the Main Steam lines, resulting in a forced plant shutdown. Reducing power level sufficiently to perform testing without causing a transient would significantly impact plant operations. The valves are air operated, balanced-disc stop check valves set in opposition to normal flow direction. The air operator holds the valve in the open position. On receipt of a close signal, the operator releases the disk which is forced closed by steam flow. The valves are not designed for repeated full design flow closure and valve degradation may occur upon repeated closure.

QUARTERLY PART STROKE TESTING: The valves are equipped with slow close 10 percent partial closure test function. If the valve were to exceed the 10 percent closure point, they may be forced closed by the steam flow which would result in a forced plant shutdown and could cause valve damage.

ALTERNATE TESTING: Valves will be full stroke exercised, timed, and failed each time the plant is in hot shutdown, unless the valve has been tested in the prior three month period.

COLD SHUTDOWN TEST JUSTIFICATION

CS-7

SYSTEM: MAIN STEAM

VALVE(s): MS100-1, MS101-1

CATEGORY: B

CLASS: 2

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise, time, and fail.

COLD SHUTDOWN TEST JUSTIFICATION: These valves are interlocked with the Main Steam isolation valves and cannot be opened when the Main Steam isolation valves are open during normal operation.

QUARTERLY PART STROKE TESTING: Valves are full-stroke on initiation and cannot be partial-stroke exercised.

COLD SHUTDOWN TESTING: Exercise, time, and fail.

GENERIC LETTER 89-04 JUSTIFICATION

GL-1

SYSTEM: MAIN STEAM

VALVE(s): MS726, MS727

CATEGORY: C

CLASS: 3

FUNCTION: Main Steam to Auxiliary Feedwater Pump Turbine Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

BASIS FOR RELIEF: There are no system design provisions for verification of reverse flow closure.

ALTERNATE TESTING: Forward flow operability is verified quarterly during auxiliary feedwater pump testing. In addition, one valve will be disassembled, inspected and manually full-stroke exercised each refueling consistent with Item 2 of Attachment 1 to NRC Generic Letter 89-04.

Full forward flow testing will occur after inspection and reassembly is completed.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: MAKEUP

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
MU1A	B 2	M-31A B-4	2.5 GT	MO	O/C O/C	TO-Q TC-Q PI-Y	CS-1 CS-1	TO-C TC-C	Letdown cooler isolation valve.	
MU1B	B 2	M-31A A-2	2.5 GT	MO	O/C O/C	TO-Q TC-Q PI-Y	CS-1 CS-1	TO-C TC-C	Letdown cooler isolation valve.	
MU2A	A 2	M-031A B-4	2.5 GT	MO AI	O O/C	TC-Q TO-Q LJ-R PI-Y	CS-1 CS-1	TC-C TO-C	Letdown line Ctmt. isolation valve.	
MU2B	B 2	M-31A A-2	2.5 GT	MO	O/C O	TO-Q PI-Y	CS-1	TO-C	Letdown cooler isolation valve.	
MU3	A 2	M-031A B-5	2.5 GT	AO C	O O/C	TC-Q TO-Q FC-Q LJ-R PI-Y	CS-1 CS-1 CS-1	TC-C TO-C FC-C	Letdown line Ctmt. isolation valve.	
MU11	B 3	M-031A H-11	2.5X3X2. TW	MO AI	O C	TC-Q PI-Y			3-way valve to align letdown to MU system or radwaste system.	
MU12A	C 3	M-31A J-8	2.5 GT	MO	O/C O	TO-Q PI-Y	CS-1	TO-C	Makeup filter isolation valve.	
MU12B	C 3	M-31A K-8	2.5 GT	MO	O/C O	TO-Q PI-Y	CS-1	TO-C	Make up filter isolation valve	
MU23	B 3	M-045 F-4	2 GL	AO O	O O	SO-Q			BAT pump discharge line flow control valve.	
MU38	A 2	M-031B B-7	1 GL	AO C	C C	TC-Q FC-Q LJ-R PI-Y	CS-4 CS-4	TC-C FC-C	RC pump seal return line Ctmt. isolation valve.	
MU40	B 3	M-031A K-10	2.5 GT	MO AI	C O	TO-Q PI-Y			BAT pump to MU Tank line block valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: MAKEUP

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
MU59A	A 2	M-031B B-2	1 GL	MO AI	O C	TC-Q LJ-R PI-Y	CS-4	TC-C	RC pump seal return line Ctmt. isolation valve.	
MU59B	A 2	M-031B C-3	1 GL	MO AI	O C	TC-Q LJ-R PI-Y	CS-4	TC-C	RC pump seal return line Ctmt. isolation valve.	
MU59C	A 2	M-031B D-3	1 GL	MO AI	O C	TC-Q LJ-R PI-Y	CS-4	TC-C	RC pump seal return line Ctmt. isolation valve.	
MU59D	A 2	M-031B E-3	1 GL	MO AI	O C	TC-Q LJ-R PI-Y	CS-4	TC-C	RC pump seal return line Ctmt. isolation valve.	
MU66A	A 2	M-031B K-5	1.5 GL	AO C	O C	TC-Q FC-Q LJ-R PI-Y	CS-4 CS-4	TC-C FC-C	RC pump seal supply line Ctmt. isolation valve.	
MU66B	A 2	M-031B J-5	1.5 GL	AO C	O C	TC-Q FC-Q LJ-R PI-Y	CS-4 CS-4	TC-C FC-C	RC pump seal supply line Ctmt. isolation valve.	
MU66C	A 2	M-031B H-5	1.5 GL	AO C	O C	TC-Q FC-Q LJ-R PI-Y	CS-4 CS-4	TC-C FC-C	RC pump seal supply line Ctmt. isolation valve.	
MU66D	A 2	M-031B F-5	1.5 GL	AO C	O C	TC-Q FC-Q LJ-R PI-Y	CS-4 CS-4	TC-C FC-C	RC pump seal supply line Ctmt. isolation valve.	
MU160	C 3	M-031A K-6	3 CK	SA NA	O/C O	FF-Q	CS-6	FF-C	BAT pump to MU Tank line check valve.	
MU169	C 2	M-031C H-2	2 CK	SA NA	C O/C	RF-Q FF-Q	CS-2 RV-2	RF-C PQR	MU to RCS inj. line check valve. Normal makeup and feed & bleed.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: MAKEUP

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
MU176	C 3	M-031A H-6	3 CK	SA NA	O/C O	FF-Q	CS-6	FF-C	BAT pump to MU Tank line check valve.	
MU181	C 3	M-031C A-5	3 CK	SA NA	O/C O	FF-Q	CS-6	FF-C	BAT pump to MU Tank line check valve.	
MU196	C 3	M-031C H-6	2.5 CK	SA NA	O/C O/C	FF-Q RF-Q	RV-4 CS-7	PQCS RF-R	MU pump discharge line check valve.	
MU197	C 3	M-031C E-6	2.5 CK	SA NA	O/C O/C	FF-Q RF-Q	RV-4 CS-7	PQCS RF-R	MU pump discharge line check valve.	
MU204	C 3	M-031C G-7	1 CK	SA NA	O/C O/C	FF-Q RF-Q	CS-10 CS-7	FF-C RF-C	MU pump min. flow line check valve.	
MU207	C 3	M-031C F-7	1 CK	SA NA	O/C O/C	FF-Q RF-Q	CS-10 CS-7	FF-C RF-C	MU pump min. flow line check valve.	
MU242	AC 2	M-031B K-4	1.5 SC	SA NA	O C	RF-Q LJ-R	RV-1	RF-R	RC pump seal supply line Ctmt. isolation valve.	
MU243	AC 2	M-031B J-4	1.5 SC	SA NA	O C	RF-Q LJ-R	RV-1	RF-R	RC pump seal supply line Ctmt. isolation vcalve.	
MU244	AC 2	M-031B H-4	1.5 SC	SA NA	O C	RF-Q LJ-R	RV-1	RF-R	RC pump seal supply line Ctmt. isolation valve.	
MU245	AC 2	M-031B F-4	1.5 SC	SA NA	O C	RF-Q LJ-R	RV-1	RF-R	RC pump seal supply line Ctmt. isolation valve.	
MU346	C 3	M-045 H-4	2 CK	SA NA	O/C O/C	FF-Q RF-Q			BAT pump discharge line check valve.	
MU347	C 3	M-045 H-2	1.5 CK	SA NA	O/C O/C	FF-Q RF-Q			BAT pump discharge line check valve.	
MU350	C 3	M-045 H-2	2 CK	SA NA	O/C O	FF-Q	CS-6	FF-C	BAT pump discharge line check valve.	
MU361	C 3	M-045 E-4	2 CK	SA NA	O/C O	FF-Q	CS-6	FF-C	BAT pump discharge line check valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: MAKEUP

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
MU383	C 3	OS-002 B-59	.5 CK	SA	O/C O	FF-Q			Aux gear oil reservoir outlet check for Makeup Pump 1-1	
MU384	C 3	OS-002 H-59	.5 CK	SA	O/C O	FF-Q			Aux gear oil reservoir outlet check for Makeup Pump 1-2	
MU423	C 3	OS-002 D-58	.5 CK	SA	O/C O/C	FF-Q RF-Q	CS-11	FF-C	Makeup pump 1 aux gear AC lube oil pump.	
MU424	C 3	OS-002 H-58	.5 CK	SA	O/C O/C	FF-Q RF-Q	CS-11	FF-C	Makeup pump 2 aux gear AC lube oil pump.	
MU800	C 2	M-031C E-2	2.5 CK	SA	C O	RF-Q FF-Q	CS-5 RV-3	RF-C FF-R	Alternate MU to RCS inj. line check valve. Alt feed & bleed.	
MU1893	C 3	M-031C D-11	6 X 8 RL	SA NA	C O	SR-T			MU Tank to MU pump suction line system relief valve.	
MU3971	B 3	M-031C G-11	3X4X3 TW	MO AI	C O	TO-Q PI-Y	CS-8	TO-C	3-way valve to align MU pump to BWST or Makeup Tank. Open position is aligned to Makeup Tank.	
MU6405	B 3	M-031C E-10	3X4X3 TW	MO AI	C O	TO-Q PI-Y	CS-8	TO-C	3-way valve to align MU pump to BWST or Makeup Tank. Open position is aligned to Makeup Tank.	
MU6408	B 3	M-031C G-6	2 GT	MO AI	O C	TC-Q PI-Y	CS-9	TC-C	MU pump discharge header train isolation block valve.	
MU6409	B 3	M-031C F-6	2	MO AI	O C	TC-Q PI-Y	CS-9	TC-C	MU pump discharge header train isolation block valve.	
MU6419	B 3	M-031C E-4	2 GL	MO AI	C O	TO-Q PI-Y			Feed & bleed line block valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: MAKEUP

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
MU6420	B 3	M-031C J-4	2.5 GT	MO AI	C O	TO-Q PI-Y	CS-3	TO-C	Feed & bleed line block valve.	
MU6421	A 2	M-031C E-3	2.5 GL	MO AI	C O/C	TO-Q TC-Q LJ-R PI-Y			Feed & bleed line Ctmt. isolation valve.	
MU6422	A 2	M-031C H-3	2.5 GT	MO AI	O O/C	TO-Q TC-Q LJ-R PI-Y	CS-3 CS-3	TC-C TO-C	Normal MU to RCS line Ctmt. isoaltion valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: MAKEUP

VALVE(s): MU1A, MU1B, MU2A, MU2B, MU3, MU12A, MU12B

CATEGORY: A

CLASS: 2

FUNCTION: RCS Letdown Line Containment Isolation Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time (MU1A, MU1B, MU2A, MU2B, MU12A, MU12B).
Exercise, time and fail (MU3).

COLD SHUTDOWN TEST JUSTIFICATION: These valves are in the normal letdown line from the RCS. Exercising during normal operation would disrupt normal RCS letdown flow which would impair the capability of the MU system to provide the proper boration ratio. Failure of each valve in the closed position coincident with normal Makeup flow could result in a manual reactor trip due to high RCS pressurizer level.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on actuation and cannot be partial-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time (MU1A, MU1B, MU2A, MU2B MU12A, MU12B).
Exercise, time and fail (MU3).

COLD SHUTDOWN TEST JUSTIFICATION

CS-2

SYSTEM: MAKEUP

VALVE(s): MU169

CATEGORY: C

CLASS: 2

FUNCTION: Makeup to RCS Injection Line Check Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: This valve is in the normal makeup line to the Reactor Coolant System. To verify reverse flow closure requires termination of the normal makeup flow. Termination of normal makeup flow during normal operation would impair the capability of the makeup system to provide the proper boration ratio or result in low pressurizer level and violation of Technical Specification 3.4.4. In addition, isolation of all makeup flow would be required, causing thermal shock to high pressure injection nozzle thermal sleeve.

QUARTERLY PART STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION

CS-3

SYSTEM: MAKEUP

VALVE(s): MU6420, MU6422

CATEGORY: A (MU6422)
B (MU6420)

CLASS: 2 (MU6422)
3 (MU6420)

FUNCTION: Normal Makeup Line to RCS Bypass Valve (MU6420) and Containment Isolation Valve (MU6422).

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: MU 6422 is the block valve to the normal makeup flow to the RCS. MU 6420 is the bypass valve around MU 32, RCS Makeup Control Valve. Exercising normally closed MU 6420 open would bypass this normal Pressurizer level control valve and inject full makeup flow into the RCS. This full makeup flow would result in an undesirable condition and may cause high pressurizer level per Technical Specification 3.4.4. Exercising MU 6422 would terminate normal makeup flow to the RCS which again would violate minimum pressurizer levels per Technical Specification 3.4.4. In addition, closing MU 6422 would isolate all makeup flow causing thermal shock degradation of the high pressure injection nozzle. Failure of the valve in the closed position coincident with normal letdown would result in a plant shutdown.

QUARTERLY PARTIAL STROKE TESTING: Valves full-stroke on initiation and cannot be partial-stroke exercised.

COLD SHUTDOWN TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-4

SYSTEM:	MAKEUP
VALVE(s):	MU38, MU59A, MU59B, MU59C, MU59D, MU66A, MU66B, MU66C, MU66D
CATEGORY:	A
CLASS:	2
FUNCTION:	RC Pump Seal Supply (MU66A,B,C,D) and Return (MU38, MU66A,B,C,D) Line Containment Isolation Valves.
ASME SECTION QUARTERLY TEST REQUIREMENTS:	Exercise and time (MU59A,B,C,D). Exercise, time and fail (MU38, MU66A,B,C,D).
COLD SHUTDOWN TEST JUSTIFICATION:	Exercising these valves during normal operation or at cold shutdown when the RCS is pressurized results in a loss of normal seal water to the RCS pump seals. If seal water is terminated, reactor coolant is forced from the high pressure RCS into the seals. Reactor coolant normally contains a high particulate matter concentration which is carried with the reactor coolant in leakage and contaminates the seals and may cause extensive damage to the seals.
QUARTERLY PARTIAL STROKE TESTING:	Valves full-stroke on initiation and cannot be partial-stroke tested.
COLD SHUTDOWN TESTING:	Exercise, time and fail (as appropriate).

COLD SHUTDOWN TEST JUSTIFICATION

CS-5

SYSTEM: MAKEUP

VALVE(s): MU800

CATEGORY: C

CLASS: 2

FUNCTION: Alternate Makeup to RCS Injection Line Check Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: Reverse flow testing MU800 during normal operation requires installing a portable pressure source (hydrostatic test pump) at MU801. The back-to-back High Pressure Injection nozzle check valves, HP48 and HP50 located in Containment, form the only boundary between this open vent connection and full RCS pressure and temperature. The potential for a loss of coolant by this path exists, which could result in a plant shutdown, and poses a danger to test personnel. Additionally, the test lineup renders that train of the Makeup system inoperable, making it unavailable for Feed and Bleed.

QUARTERLY PART STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION

CS-7

SYSTEM: MAKEUP

VALVE(s): MU196, MU197, MU204, MU207

CATEGORY: C

CLASS: 3

FUNCTION: Makeup Pump Discharge Check Valves (MU196, MU197).
Makeup Pump Minimum Flow Line Check Valves (MU204, MU207).

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: The only way to verify reverse flow closure involves closing pump suction line manual valves MU190 and MU191. This action will make the respective Makeup pump inoperable. Technical Specification 3.1.2.4 requires two operable Makeup pumps.

In addition proper test controls are not present when a makeup pump is in service. If either suction valve is closed with the other makeup pump in normal operation and the idle pump check valves fail to close, or leaks excessively, the pump seals and low pressure pump inlet piping will be overpressurized. Exposing the pump seals and low pressure pump suction piping to normal makeup pump discharge pressure could cause extensive damage to the makeup pump seals and low pressure pump suction piping.

QUARTERLY PART STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION

CS-8

SYSTEM: MAKEUP

VALVE(s): MU3971, MU6405

CATEGORY: B

CLASS: 3

FUNCTION: Three way valves for normal Makeup pump suction supply from the Makeup Storage Tank, when open pump suction swaps to the BWST.

ASME SECTION XI
QUARTERLY TEST
REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST
JUSTIFICATION: MU3971 and MU6405 are in the closed position which allows the Makeup Pump to take suction on the Makeup Tank. To cycle these valves would allow the Makeup Pumps to take suction on the BWST. This would cause cold highly borated water to enter as normal makeup flow to the RCS. This makeup flow would result in an undesirable condition and would cause a power reduction transient. In addition this cold water would cause thermal shock degradation of the high pressure injection nozzle and possible damage to RCP seals. Failure of the valves in the closed position (return to the Makeup Tank) would result in a plant shutdown.

QUARTERLY PARTIAL
STROKE TESTING: N/A

COLD SHUTDOWN
TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-9

SYSTEM: MAKEUP

VALVE(s): MU6408, MU6409

CATEGORY: A

CLASS: 2

FUNCTION: Cross connect lines for Makeup Trains.

ASME SECTION XI
QUARTERLY TEST
REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST
JUSTIFICATION: MU6408 and MU6409 are cross connect lines for Makeup Pump 1-1 or 1-2 to RCP seal and Makeup Train 2 or 1 flow path. Exercising MU6408 or MU6409 would terminate normal makeup flow to the RCS which would violate minimum pressurizer levels per Technical Specification 3.4.4. In addition, closing MU6408 or MU6409 would isolate all makeup flow causing thermal shock degradation of the high pressure injection nozzle. Failure of the valve in the closed position coincident with normal letdown could result in a plant shutdown.

QUARTERLY PARTIAL
STROKE TESTING: N/A

COLD SHUTDOWN
TESTING: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

CS-10

SYSTEM:	MAKEUP
VALVE(s):	MU204, MU207
CATEGORY:	C
CLASS:	3
FUNCTION:	Makeup Pump Minimum Flow Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify forward flow operability.

COLD SHUTDOWN TEST JUSTIFICATION: Forward flow operability of these valves cannot be verified by line flow rate due to lack of installed instrumentation. Flow rate can only be obtained by using the Borated Water Storage Tank as the makeup pump supply and measuring a known volume increase over time in the Makeup Tank.

QUARTERLY PARTIAL STROKE TESTING: None.

COLD SHUTDOWN: Verified full forward flow at cold shutdown by verifying the check valve opens to pass design flow.

COLD SHUTDOWN TEST JUSTIFICATION

CS-11

SYSTEM: MAKEUP

VALVE(s): MU423, MU424

CATEGORY: C

CLASS: 3

FUNCTION: Makeup Pump Auxiliary Gear AC Lube Oil Pump.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify forward flow operability.

COLD SHUTDOWN TEST JUSTIFICATION: The AC lube oil pump provide prestarting oil to the makeup pump speed increaser. After the makeup reaches running speed a gear driven pump provide lubrication and the AC lube oil pump is shutdown. This pump is interlocked to auto start if aux gear lube oil pressure decreases. To verify forward flow would require stopping the makeup pump.

QUARTERLY PARTIAL STROKE TESTING: If makeup pump is stopped, then prior to starting, forward flow will be verified by observing the AC oil pump starts and nominal downstream oil pressure is achieved.

COLD SHUTDOWN: Verified full forward flow at cold shutdown by verifying the nominal downstream oil pressure is achieved.

RELIEF REQUEST

RV-1

SYSTEM: MAKEUP

VALVE(s): MU242, MU243, MU244, MU245

CATEGORY: AC

CLASS: 2

FUNCTION: RCS Pump Seal Supply Line Containment Isolation Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

BASIS FOR RELIEF: The only method available to verify reverse flow closure is by valve leak testing during Appendix J, Type C, testing at refueling.

ALTERNATE TESTING: Reverse flow closure will be verified during Appendix J, Type C, testing at refueling.

RELIEF REQUEST

RV-2

SYSTEM: MAKEUP

VALVE(s): MU169

CATEGORY: C

CLASS: 2

FUNCTION: Normal Makeup To RCS Line Check Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify forward flow operability.

BASIS FOR RELIEF: During normal operation makeup flow to the RCS is automatically regulated in response to RCS conditions by upstream flow control valve MU32. To inject full flow into the RCS during normal operation would result in undesirable RCS boron concentrations, system temperature and level transients and could result in thermal shock to the high pressure injection nozzle thermal sleeve. In addition, the MU pumps are incapable of overcoming RCS operating conditions sufficiently to inject full feed and bleed design flow rate. The Makeup pumps cannot be run at full feed and bleed flow rate at cold shutdown with the reactor vessel head in place due to the inability to letdown that full flow. This could result in a low temperature overpressurization of the RCS.

ALTERNATE TESTING: This valve will be partial-stroke exercised quarterly utilizing normal makeup flow and full-stroke exercised at refueling outages by verifying that the valve opens to pass full forward flow rate.

RELIEF REQUEST

RV-3

SYSTEM: MAKEUP

VALVE(s): MU800

CATEGORY: C

CLASS: 2

FUNCTION: MU to RCS Feed and Bleed Line Check Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify forward flow operability.

BASIS FOR RELIEF: This line is isolated during all modes of operation except during the MU system feed and bleed mode of operation. To test the valve by injecting makeup flow into the RCS during normal operation would result in undesirable RCS boron concentrations, system temperature and level transients and could result in thermal shock to the high pressure injection nozzle thermal sleeve. In addition, the MU pumps are incapable of overcoming RCS operating conditions sufficiently to inject full feed and bleed design flow rate. The Makeup pumps cannot be run at full feed and bleed flow rate at cold shutdown with the reactor head in place due to the inability to letdown that full flow. This would result in a low temperature overpressurization of the RCS.

ALTERNATE TESTING: This valve will be full-stroke exercised during refueling outages by verifying that the valve opens to pass full forward flow rate.

RELIEF REQUEST

RV-4

SYSTEM: MAKEUP

VALVE(s): MU196, MU197

CATEGORY: C

CLASS: 3

FUNCTION: Makeup Pump Discharge Line Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify forward flow operability.

BASIS FOR RELIEF: During normal operation makeup flow to the RCS is automatically regulated in response to RCS conditions by upstream flow control valve MU32. To inject full flow into the RCS during normal operation would result in undesirable RCS boron concentrations, system temperature and level transients and could result in thermal shock to the high pressure injection nozzle thermal sleeve. In addition, the MU pumps are incapable of overcoming RCS operating conditions sufficiently to inject full feed and bleed design flow rate. The Makeup pumps cannot be run at full feed and bleed flow rate at cold shutdown with the reactor vessel head in place due to the inability to letdown that full flow. This could result in a low temperature overpressurization of the RCS.

ALTERNATE TESTING: These valves will be partial-stroke exercised quarterly utilizing normal makeup flow and full-stroke exercised at refueling outages by verifying that the valve opens to pass design flow.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: NITROGEN

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
NN58	AC 2	M-019 B-3	1 CK	SA NA	O C	RF-Q LJ-R	RV-1	RF-R	Nitrogen supply to Pressurizer Quench Tank Ctmt. isolation Valve. Pen. P44B.	
NN236	A 2	M-019 B-5	1 GT	AO C	O C	TC-Q FC-Q LJ-R PI-Y			Nitrogen supply to Pressurizer Quench Tank Ctmt. isolation valve. Pen. P44B.	
NN1002	C 3	M-019 E-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCP1CX	
NN1004	3	M-019 E-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PBP1DX	
NN1006	C 3	M-019 E-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PBL1EX	
NN1008	C 3	M-019 F-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to P411gx	
NN1010	C 3	M-019 F-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PBC2DX	
NN1012	C 3	M-019 F-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCL2EX	
NN1014	C 3	M-019 G-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCL2FX	
NN1016	C 3	M-019 G-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCL2GX	
NN1018	C 3	M-019 G-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to P1P3BX	
NN1020	C 3	M-019 G-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PAL3DX	
NN1022	C 3	M-019 G-2	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PAC3EX	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: NITROGEN

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
NN1054	C 3	M-019 A-14	3/ CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PAP1PX	
NN1056	C 3	M-019 A-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PBP1RX	
NN1058	C 3	M-019 B-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to P1C2LX	
NN1060	C 3	M-019 B-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to P1P2MX	
NN1062	C 3	M-019 F-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PAL2NX	
NN1064	C 3	M-019 B-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PAP2PX	
NN1066	C 3	M-019 C-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PBC3PX	
NN1068	C 3	M-019 C-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PBL3QX	
NN1070	C 3	M-019 C-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCP4NX	
NN1072	C 3	M-019 C-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCP4PX	
NN1074	C 3	M-019 C-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCP4QX	
NN1076	C 3	M-019 D-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to P3L4SX	
NN1078	C 3	M-019 D-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCC4TX	
NN1080	C 3	M-019 D-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCC4UX	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: NITROGEN

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
NN1082	C 3	M-019 D-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCC4VX	
NN1084	C 3	M-019 E-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCL4WX	
NN1086	C 3	M-019 E-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCP5NX	
NN1088	C 3	M-019 E-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCP5PX	
NN1090	C 3	M-019 E-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCP5UX	
NN1092	C 3	M-019 F-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCC5TX	
NN1094	C 3	M-019 F-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCC5UX	
NN1096	C 3	M-019 F-14	3/8 CK	SA NA	O C	RF-Q	CS-1	RF-C	Electrical penetration supply to PCC5VX	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: NITROGEN

VALVE: East Side Electrical Penetration Check Valves
NN1002, NN1004, NN1006, NN1008, NN1010,
NN1012, NN1014, NN1016, NN1018, NN1020,
NN1022, NN1024, NN1026, NN1028, NN1030,
NN1032, NN1034, NN1036, NN1038, NN1040,
NN1042, NN1044, NN1046

West Side Electrical Penetration Check Valves
NN1050, NN1052, NN1054, NN1056, NN1058,
NN1060, NN1062, NN1064, NN1066, NN1068,
NN1070, NN1072, NN1074, NN1076, NN1078,
NN1080, NN1082, NN1084, NN1086, NN1088,
NN1090, NN1092, NN1094, NN1096

CATEGORY: C

CLASS: 2

FUNCTION: Nitrogen Check Valves Supply to Containment Electrical Penetrations.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse-flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: To perform operability test of these valves will require personnel to enter the annulus. This area is located between the containment vessel and shield building. The annulus is a locked high radiation area that contains high neutron fields. To do this test during normal operation would violate ALARA concerns.

COLD SHUTDOWN TESTING: Verify reverse flow closure.

RELIEF REQUEST

RV-1

SYSTEM: NITROGEN

VALVE: NN58

CATEGORY: AC

CLASS: 2

FUNCTION: Nitrogen System Containment Isolation Check Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse-flow closure.

BASIS FOR RELIEF: The only method available to verify reverse-flow closure is by valve leak testing during Appendix J, Type C, testing at refueling.

ALTERNATE TESTING: Reverse-flow closure will be verified during Appendix J, Type C, testing at refueling.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: REACTOR COOLANT

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
RC2A	BC 1	M-030A A-3	2.5X4 GT	EM SA	C O/C	TO-Q TC-Q FC-Q PI-Y	RV-1 RV-1 RV-1 RV-1	SO-R SC-R FC-R	Electically controlled pilot valve operated relief valve.(PORV)	
RC10	B 1	M-030A C-9	2.5 GT	MO AI	O C	TC-Q PI-Y	CS-1	TC-C	Press. spray line block valve.	
RC11	B 1	M-030A B-3	2.5 GT	MO AI	O O/C	TO-Q TC-Q PI-Y			Press. PORV line block valve.	
RC13A	C 1	M-030A B-7	4 X 6 RL	SA NA	C O	SR-T			Press. safety relief valve.	
RC13B	C 1	M-030A B-5	4 X 6 RL	SA NA	C O	SR-T			Press. safety relief valve.	
RC51	C 1	M-030A C-9	1.5 CK	SA NA	C O	FF-Q	CS-2	FF-C	Decay Heat Sys. Aux. spray to Press. line check valve.	
RC113	AC 2	M-040A F-3	2 CK	SA NA	O/C C	RF-Q LJ-R	RV-2	RF-R	Press. Quench Tank inlet line Ctmt. isolation valve. Pen. P41.	
RC200	B 1	M-030A B-3	1 GT	MO AI	C O/C	TO-Q TC-Q PI-Y	CS-3 CS-3	TO-C TC-C	Press. vent line block valve.	
RC229A	A 2	M-040A H-4	3 GL	AO C	O C	TC-Q FC-Q LJ-R PI-Y			Press. Quench Tank cooling line Ctmt. isolation valve. Pen. P48.	
RC229B	A 2	M-040A H-3	3 GL	AO C	O C	TC-Q FC-Q LJ-R PI-Y			Press. Quench Tank cooling line Ctmt. isolation valve. Pen. P48.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: REACTOR COOLANT

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
RC232	A 2	M-040A F-4	2 GT	AO C	O C	TC-Q FC-Q LJ-R PI-Y			Press. Quench Tank cooling line Ctmt. isolation valve. Pen. P41.	
RC239A	B 1	M-030A B-3	1 GT	MO AI	C O	TO-Q PI-Y			Press. vent line block valve.	
RC240A	A 1	M-030A B-2	1 GT	MO AI	O/C C	TC-Q LJ-R PI-Y			RCS sample header Ctmt. isolation valve. Pen. P1.	
RC240B	A 2	M-030A B-1	1 GT	MO AI	O/C C	TC-Q LJ-R PI-Y			RCS sample header Ctmt. isolation valve. Pen. P1.	
RC1719A	A 2	M-040A K-7	3 DA	AO C	O C	TC-Q FC-Q LJ-R PI-Y			RCS vent header Ctmt. isolation valve. Pen. P16.	
RC1719B	A 2	M-040A K-8	3 DA	AO C	O C	TC-Q FC-Q LJ-R PI-Y			RCS vent header Ctmt. isolation valve. Pen. P16.	
RC1773A	A 2	M-040[illegible] C-10	3 DA	AO C	O C	TC-Q FC-Q LJ-R PI-Y			RCS drain header Ctmt. isolation valve. Pen. P32.	
RC1773B	A 2	M-040A D-10	3 DA	AO C	O C	TC-Q FC-Q LJ-R PI-Y			RCS drain header Ctmt. isolation valve. Pen. P32.	
RC4608A	B 1	M-030A D-11	1 GT	SO C	C O/C	TO-Q TC-Q FC-Q PI-Y	CS-4 CS-4 CS-4	TO-C TC-C FC-C	Post Accident RCS loop vent valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: REACTOR COOLANT

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
RC46088	B 1	M-030A D-11	1 GT	SO C	C O/C	TO-Q TC-Q FC-Q PI-Y	CS-4 CS-4 CS-4	TO-C TC-C FC-C	Post Accident RCS loop vent valve.	
RC4610A	B 1	M-030A E-2	1 GT	SO C	C O/C	TO-Q TC-Q FC-Q PI-Y	CS-4 CS-4 CS-4	TO-C TC-C FC-C	Post Accident RCS loop vent valve.	
RC4610B	B 1	M-030A G-2	1 GT	SO C	C O/C	TO-Q TC-Q FC-Q PI-Y	CS-4 CS-4 CS-4	TO-C TC-C FC-C	Post Accident RCS loop vent valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM:	REACTOR COOLANT
VALVE(s):	RC10
CATEGORY:	B
CLASS:	1
FUNCTION:	RC Pressurizer Spray Line Block Valve.
ASME SECTION XI QUARTERLY TEST REQUIREMENTS:	Exercise and time.
COLD SHUTDOWN TEST JUSTIFICATION:	Failure of this valve in the closed position during normal operation would result in loss of normal pressurizer control function and could result in a forced plant shutdown.
QUARTERLY PARTIAL STROKE TESTING:	Valve full-strokes on actuation and cannot be partial-stroke exercised.
COLD SHUTDOWN TESTING:	Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION

Cs-2

SYSTEM:	REACTOR COOLANT
VALVE(s):	RC51
CATEGORY:	C
CLASS:	1
FUNCTION:	RC Pressurizer Auxiliary Spray Line Check Valve.
ASME SECTION XI QUARTERLY TEST REQUIREMENTS:	Verify forward flow operability.
COLD SHUTDOWN TEST JUSTIFICATION:	The only way to verify forward flow operability is by injecting Decay Heat System flow into the RCS pressurizer. The Decay Heat System pumps lack sufficient head to overcome RCS operating pressure and inject flow into the Pressurizer.
QUARTERLY PARTIAL STROKE TESTING:	N/A
COLD SHUTDOWN TESTING:	Verify forward flow operability.

COLD SHUTDOWN TEST JUSTIFICATION

CS-3

SYSTEM: REACTOR COOLANT

VALVE(s): RC200

CATEGORY: B

CLASS: 1

FUNCTION: Pressurizer Vent Line Block Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise and time.

COLD SHUTDOWN TEST JUSTIFICATION: This valve is the second normally closed boundary valve between the Reactor Coolant System and the low pressure Gaseous Radwaste System. It is maintained closed during normal operation to maintain Reactor Coolant System Integrity. The only time this valve is opened is during startup to vent the pressurizer. If the valve is exercised during normal operation and fails in the open position a single upstream valve provides Reactor Coolant System integrity and the plant will be forced to shutdown.

QUARTERLY PARTIAL STROKE TESTING: Valve full-stroke on initiation and can not be partial-stroke exercised.

COLD SHUTDOWN TESTING: Exercise, time, and fail.

COLD SHUTDOWN TEST JUSTIFICATION

CS-4

SYSTEM: REACTOR COOLANT

VALVE(s): RC4608A, RC4608B, RC4610A, RC4610B

CATEGORY: B

CLASS: 1

FUNCTION: Post Accident RCS Loop Vent Valves

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Exercise, time and fail.

COLD SHUTDOWN TEST JUSTIFICATION: These post-accident RCS loop vent valves are Valcor solenoid operated valves with magnetic position switches integral to the valve. This valve design is susceptible to line pressure surges and will open if subjected to a pressure surges. If the valves are cycled at system pressure the closed valve may be forced open and could result in a significant RCS leak.

COLD SHUTDOWN TESTING: These valves will be full-stroke exercised, time, fail, and flow path verified operable at cold shutdown. Position indication is indirectly determined by verification of flow.

RELIEF REQUEST

RV-1

SYSTEM: REACTOR COOLANT

VALVE(s): RC2A

CATEGORY: BC

CLASS: 1

FUNCTION: Pressurizer Power Operated Relief Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Exercised, time, and fail

BASIS FOR RELIEF: Full stroking and timing cannot be visually verified or measured on this valve since the valve mechanisms are internal. Only indication in the control room is the pilot valve position light which does not indicate true pilot valve or PORV valve position but only the open/close demand signal. Acoustic monitors provide flow indication, however these are independent of the valve. The fail position for this valve is closed. This occurs upon loss of power to the solenoid pilot valve, being the normal means to close the valve.

System testing at normal pressure and temperature cannot occur since this would cause a large pressure drop in the RCS hence causing a pressure transient with a possible Low Pressure Reactor Protection Trip. Valve testing with the PORV Block Valve (RC 11) closed cannot occur since system pressure is the motive force for opening the valve.

Valve testing cannot occur at cold shutdown because the correct conditions for the testing may not be present. Testing can only occur during a defined RCS pressure band to ensure the valve has sufficient motive force to stroke open, to limit any RCS system pressure transient, and to limit generation of radwaste.

ALTERNATE TESTING: Valve will be fully stroked at refueling per DB-SP-03366, Pressurizer Powered Operated Relief Valve Cycle Test. This test will measure acceptable flow through the PORV by timing the pressure drop from defined and repeatable conditions. If valve fails to completely open then the time for pressure decrease would increase.

A reference value will be defined based upon a pressure change over a time period. Acceptance criteria based upon this reference value will be defined and results trended to identify valve degradation.

Channel calibration of PORV setpoint occurs every refueling per Channel Calibration of 58A-ISPRC02B2, RCS Pressure to RPS Channel 1. Present setpoint as allowed by Technical Specification is less than 2355 psig. This test verifies the solenoid associated with RC2A will energize at the system setpoint.

RELIEF REQUEST

RV-2

SYSTEM: REACTOR COOLANT

VALVE(s): RC113

CATEGORY: AC

CLASS: 2

FUNCTION: Pressurizer Quench Tank Inlet Line Containment Isolation Check Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify reverse flow closure.

BASIS FOR RELIEF: The only method available to verify reverse flow closure is by valve leak testing during Appendix J, Type C, testing at refueling.

ALTERNATE TESTING: Reverse flow closure will be verified during Appendix J, Type C, testing at refueling.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: SAMPLE

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
SS235A	A 2	M-040A E-4	1 GL	AO C	O/C C	TC-Q FC-Q LJ-R PI-Y			Quench Tank vapor sample Ctmt. isolation valve.	
SS235B	A 2	M-040A E-3	1 GL	AO C	O/C C	TC-Q FC-Q LJ-R PI-Y			Quench Tank vapor sample Ctmt. isolation valve.	
SS598	B 2	M-007A H-3	.75 GL	AO C	O C	TC-Q FC-Q PI-Y			SG sample line Ctmt. isolation valve.	
SS607	B 2	M-007A H-9	.75 GL	AO C	O C	TC-Q FC-Q PI-Y			SG sample line Ctmt. isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: SERVICE WATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
SW17	C 3	M-041A G-3	20 CK	SA NA	O O/C	FF-Q RF-Q	CS-2 CS-4	PQCS PQCS	SW pump discharge line check valve.	
SW18	C 3	M-041A G-10	20 CK	SA NA	O O/C	FF-Q RF-Q	CS-2 CS-4	PQCS PQCS	SW pump discharge line check valve.	
SW19	C 3	M-041A G-7	20 CK	SA NA	O O/C	FF-Q RF-Q	CS-2 CS-4	PQCS PQCS	SW pump discharge line check valve.	
SW57	C 3	M-041A A-7	20 CK	SA NA	O C	RF-Q	CS-1	RF-C	Return from cooling water HX. to SW line check valve.	
SW1356	B 2	M-041C C-2	8 BL	AO O	O O/C	TO-Q TC-Q FO-Q PI-Y			Ctmt. Air Cooler return to SW line isolation valve.	
SW1357	B 2	M-041C C-9	8 BL	AO O	O O/C	TO-Q TC-Q FO-Q PI-Y			Ctmt. Air Cooler return to SW line isoaltion valve.	
SW1358	B 2	M-041C C-5	8 BL	AO O	C O/C	)-Q TC-Q FO-Q PI-Y			Ctmt Air Cooler return to SW line isolation valve.	
SW1366	B 3	M-041C H-5	8 BL	MO AI	O O/C	TO-Q TC-Q PI-Y			SW supply to Ctmt. Air Coolers line isolation valve.	
SW1367	B 3	M-041C H-12	8 BL	MO AI	O O/C	TO-Q TC-Q PI-Y			SW supply to Ctmt. Air Coolers line isolation valve.	
SW1368	B 3	M-041C H-8	8 BL	MO AI	O O/C	TO-Q TC-Q PI-Y			SW supply to Ctmt. Air Coolers line isolation valve.	
SW1379	B 3	M-041A H-4	4 GT	MO AI	O/C O	TO-Q			SW pump strainer blowdown line block valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: SERVICE WATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
SW1380	B 3	M-041A H-11	4 GT	MO AI	O/C O	TO-Q			SW pump strainer blowdown line block valve.	
SW1381	B 3	M-041A H-7	4 GT	MO AI	O/C O	TO-Q			SW pump strainer blowdown line block valve.	
SW1382	B 3	M-041C J-4	6 BF	MO AI	C O	TO-Q PI-Y			SW to AFW pump suction line block valve.	
SW1383	B 3	M-041C K-9	6 BF	MO AI	C O	TO-Q PI-Y			SW to AFW pump suction line block valve.	
SW1395	B 3	M-041A D-10	20 BF	MO AI	O C	TC-Q PI-Y	CS-5	PQCS	SW supply to nonessential components line isolation valve.	
SW1399	B 3	M-041A D-8	20 BF	MO AI	C C	TC-Q PI-Y	CS-5	PQCS	SW supply to nonessential components line isolation valve.	
SW1424	B 3	M-041B C-7	16 BF	AO O	O/C O	TO-Q FO-Q PI-Y	CS-3	PQCS	CCW HX SW outlet line temperature control valve.	
SW1429	B 3	M-041B C-9	16 BF	AO O	O/C O	TO-Q FO-Q PI-Y	CS-3	PQCS	CCW HX SW outlet line temperature control valve.	
SW1434	B 3	M-041B C-11	16 BF	AO O	O/C O	TO-Q FO-Q PI-Y	CS-3	PQCS	CCW HX SW outlet line temperature control valve.	
SW2927	B 3	M-041B F-7	1.5 GT	MO AI	C O	TO-Q PI-Y			Control Room Emerg. Cond. SW supply line isolation valve.	
SW2928	B 3	M-041B G-11	1.5 GT	MO AI	C O	TO-Q PI-Y			Control Room Emerg. Cond. SW supply line isolation valve.	

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: SERVICE WATER

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
SW2929	B 3	M-041C A-4	20 BF	MO AI	O/C O/C	TO-Q TC-Q PI-Y			SW discharge to Intake Structure isolation valve.	
SW2930	B 3	M-041C A-5	30 BF	MO AI	O/C O/C	TO-Q TC-Q PI-Y			SW discharge to Intake Forebay isoaition valve.	
SW2931	B 3	M-041C A-6	30 BF	MO AI	O/C C	TC-Q PI-Y			SW discharge to Cooling Tower Makeup line block valve.	
SW2932	B 3	M-041C A-8	30 BF	MO AI	O/C C	TC-Q PI Y			SW discharge to Collection Box line block valve.	
SW3962	C 3	M-041A E-5	6 X 8 RL	SA NA	C O	SR-T			SW supply header relief valve.	
SW3963	C 3	M-041A E-10	6 X 8 RL	SA NA	C O	SR-T			SW supply header relief valve.	
SW5067	B 3	M-041C J-8	1 GT	MO AI	O O	TO-Q PI-Y			SW to H2 Dilution Blower line isolation valve.	
SW5068	B 3	M-041B J-4	1 GT	MO AI	O O	TO-Q PI-Y			SW to H2 Dilution Blower line isolation valve.	

COLD SHUTDOWN TEST JUSTIFICATION

CS-1

SYSTEM: SERVICE WATER

VALVE(s): SW57

CATEGORY: C

CLASS: 3

FUNCTION: Return From Cooling Water Heat Exchangers to Service Water Line Check Valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: To verify reverse flow closure during normal operation would require isolating the cooling water heat exchangers. The cooling water heat exchangers are in service during normal operation to remove heat from the turbine condenser. Isolation of the cooling water heat exchangers during normal operation could result in a turbine trip and forced plant shutdown.

QUARTERLY PARTIAL STROKE TESTING: N/A

COLD SHUTDOWN TESTING: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION

CS-2

SYSTEM: SERVICE WATER

VALVE(s): SW17, SW18, SW19

CATEGORY: C

CLASS: 3

FUNCTION: Forward flow operability is required to provide full opening of the check valve.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Verify forward flow.

COLD SHUTDOWN TEST JUSTIFICATION: Quarterly full forward flow testing cannot occur because plant condition does not allow the full forward flow rate conditions. Full forward flow condition would require the essential inservice heat exchanger (component cooling water) flow to be increase beyond the normal temperature control set point. This excessive flow would cause excessive heat removal from equipment being serviced by this heat exchanger. In previous operation the RCP seal have been damaged when these conditions were present. This and other normal operating heat exchangers could result in temperature transients which could result in equipment damage or a forced plant shutdown.

QUARTERLY PARTIAL STROKE TESTING: Valves will be partial forward flow tested quarterly.

COLD SHUTDOWN TESTING: Verify full forward flow.

COLD SHUTDOWN TEST JUSTIFICATION

CS-3

SYSTEM: SERVICE WATER

VALVE(s): SW1424, SW1429, SW1434

CATEGORY: B

CLASS: 3

FUNCTION: These valves modulate to control the service water (SW) flow rate through the component cooling water (CCW) heat exchangers to control CCW system temperature. Valves are designed to fail full-open on loss of air or open upon a safety system actuation.

ASME SECTION XI QUARTERLY TEST REQUIREMENTS: Time open and fail open.

COLD SHUTDOWN TEST JUSTIFICATION: These SW control valves control CCW cooling water loop temperature. To cycle the inservice valve at power could cause a temperature disturbance, hence potential damage to the running reactor coolant pump seals. Stroke test of the inservice valve during normal operation would require swapping the running CCW loop. This too could cause a temperature disturbance and therefore potential damage to the reactor coolant pumps seals causing a plant shutdown. Plant Technical Specification 3.4.1.1 requires the reactor coolant pumps and associated support equipment to be operable when the plant is in modes 1 and 2.

QUARTERLY PARTIAL STROKE TESTING: Valves will be stroke tested quarterly if not required to modulate for control of component cooling temperature. If valve is removed from service and has not been tested within the past 92 days then prior to return to service the valve will be stroke tested.

COLD SHUTDOWN TESTING: Valves will be timed open and failed open if not done so within the last 92 days.

COLD SHUTDOWN TEST JUSTIFICATION

CS-4

SYSTEM: SERVICE WATER

VALVE(s): SW17, SW18, SW19

CATEGORY: C

CLASS: 3

FUNCTION: Service Water Pump Discharge Check Valves.

ASME SECTION XI QUARTERLY TEST REQUIREMENT: Verify reverse flow closure.

COLD SHUTDOWN TEST JUSTIFICATION: During normal operation two of the three Service Water pumps are in operation. The third pump is an installed spare. The two trains are isolated from each other by normally closed manual cross-tie valves. One of the three pumps supplies cooling to nonessential loads. This pump will automatically align to essential loads when required. One pump is aligned to essential loads. To perform reverse flow closure verification on all three pump discharge check valves during normal operation would require realigning both the manual cross-tie header valves and essential loads. Realignment of the loads during normal operation could result in temperature and pressure transients which could result in equipment damage or a forced plant shutdown.

QUARTERLY PARTIAL STROKE TESTING: Reverse flow closure verification will be performed quarterly when the respective SW pump is aligned as the standby or spare pump. Reverse flow closure verification will be performed if a running SW pump has been stopped, the respective check valve has not been tested within 92 days, and can be tested without cross tying essential headers.

COLD SHUTDOWN TESTING: Reverse flow verification will be preformed at each cold shutdown if not preformed within 92 days.

COLD SHUTDOWN TEST JUSTIFICATION

CS-5

SYSTEM:	SERVICE WATER
VALVE(s):	SW1399, SW1395
CATEGORY:	B
CLASS:	3
FUNCTION:	These valves provide isolation from the essential to non-essential header upon Safety Feature Actuation System Level 2. The non essential header supplies the Turbine Plant Cooling Water System.
ASME SECTION XI QUARTERLY TEST REQUIREMENTS:	Time open and closed.
COLD SHUTDOWN TEST JUSTIFICATION:	These SW valves will close to maintain essential side integrity by isolating the non-essential cooling water loop. To cycle the inservice valve at power would cause a temperature disturbance to the secondary side equipment, hence potential damage to secondary equipment. If valve failed in closed position then this would result in temperature transients causing equipment damage and a forced plant shutdown.
QUARTERLY PARTIAL STROKE TESTING:	If the valve is not supplying the non-essential header then the valve will be stroked each quarter.
COLD SHUTDOWN	If the valve is supplying the non-essential header then the valves will be timed closed if not done so within the last 92 days.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: STATION AIR

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
SA502	AC 2	M-015D G-8	1.5 CK	SA NA	C C	RF-Q LJ-R	RV-1	RF-R	SA to Ctmt. isolation valve.	
SA532	A 2	M-034 B-4	2 GL	MA NA	C C	PAS LJ-R			Ctmt. isolation manual.	
SA533	A 2	M-034 C-5	2 GL	MA NA	C C	PAS LJ-R			Ctmt. isolation manual.	
SA535	A 2	M-034 C-5	2 GT	MA NA	LC C	PAS LJ-R			Ctmt. isolation manual locked closed valve.	
SA536	A 2	M-034 A-4	2 GT	MA NA	LC C	PAS LJ-R			Ctmt. isolation manual locked closed valve.	
SA2010	A 2	M-015D F-8	1.5 GT	AO C	C C	TC-Q FC-Q LJ-R PI-Y			SA to Ctmt. isolation valve.	

RELIEF REQUEST

RV-1

SYSTEM: STATION AIR

VALVE(s): SA502

CATEGORY: AC

CLASS: 2

FUNCTION: Station Air Containment Isolation Check Valve.

ASME SECTION XI
QUARTERLY TEST
REQUIREMENTS: Verify reverse-flow closure.

BASIS FOR RELIEF: The only method available to verify reverse-flow closure is by valve leak testing during Appendix J, Type C, testing at refueling.

ALTERNATE TESTING: Reverse-flow closure will be verified during Appendix J, Type C, testing at refueling.

VALVE TEST TABLE
TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER PLANT

SYSTEM: STATION DRAINS

VALVE NO.	CAT. & CL.	DWG. NO. & COORD.	SIZE & TYPE	ACT. TYPE & FAIL POS.	POS. NORM. & S-R OP.	CODE TEST REQ.	C.S. OR RELIEF REQUEST NO.	C.S. OR ALTERNATE TEST PERFORMED	DESCRIPTION & NOTES	CHG.
DR2012A	A 2	M-046 C-9	4 GT	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. normal sump isolation valve.	
DR2012B	A 2	M-046 C-10	4 GT	MO AI	O C	TC-Q LJ-R PI-Y			Ctmt. normal sump isolation valve.	