

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.3.3 -----NOTE-----            Not required to be met when the 6 inch or 18 inch primary containment purge and 18 inch primary containment exhaust valves are open for inerting, de-inerting, pressure control, ALARA or air quality considerations for personnel entry, or Surveillances that require the valves to be open.            -----            Verify each 6 inch and 18 inch primary containment purge valve and each 18 inch primary containment exhaust valve is closed.</p>	<p>31 days</p>
<p>SR 3.6.1.3.4 -----NOTES-----            1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.            2. Not required to be met for PCIVs that are open under administrative controls.            3. Not required to be performed for test taps with a diameter <math>\leq</math> 1 inch.            -----            Verify each primary containment isolation manual valve and blind flange that is located outside primary containment and is required to be closed during accident conditions is closed.</p>	<p>31 days</p>

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SR 3.6.1.3.3 (continued)

valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other PCIV requirements discussed in SR 3.6.1.3.4.

SR 3.6.1.3.4

This SR verifies that each primary containment isolation manual valve and blind flange that is located outside primary containment and is required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the primary containment boundary is within design limits.

This SR does not require any testing or valve manipulation. Rather, it involves verification that those PCIVs outside primary containment, and capable of being mispositioned, are in the correct position. Since verification of valve position for PCIVs outside primary containment is relatively easy, the 31 day Frequency was chosen to provide added assurance that the PCIVs are in the correct positions.

Three Notes have been added to this SR. The first Note allows valves and blind flanges located in high radiation areas to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable since the primary containment is inerted and access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these PCIVs, once they have been verified to be in the proper position, is low. A second Note has been included to clarify that PCIVs that are open under administrative controls are not required to meet the SR during the time that the PCIVs are open. A third Note states that performance of the SR is not required for test taps with a diameter  $\leq 1$  inch. It is the intent that this SR must still be met, but actual performance is not required for test taps with a diameter  $\leq 1$  inch. The Note 3 allowance is consistent with the original plant licensing basis.

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SR 3.6.1.3.5

This SR verifies that each primary containment manual isolation valve and blind flange that is located inside primary containment and is required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the primary containment boundary is within design limits. For PCIVs inside primary containment, the Frequency defined as "prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days" is appropriate since these PCIVs are operated under administrative controls and the probability of their misalignment is low.

Two Notes have been added to this SR. The first Note allows valves and blind flanges located in high radiation areas to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable since the primary containment is inerted and access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these PCIVs, once they have been verified to be in their proper position, is low. A second Note has been included to clarify that PCIVs that are open under administrative controls are not required to meet the SR during the time that the PCIVs are open.

SR 3.6.1.3.6

The traversing incore probe (TIP) shear isolation valves are actuated by explosive charges. Surveillance of explosive charge continuity provides assurance that TIP valves will actuate when required. Other administrative controls, such as those that limit the shelf life of the explosive charges, must be followed. The 31 day Frequency is based on operating experience that has demonstrated the reliability of the explosive charge continuity.

SR 3.6.1.3.7

Verifying the correct alignment for each manual valve in the SGIG System required flow paths provides assurance that the proper flow paths exist for system operation. This SR does not apply to valves that are locked or otherwise secured in

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SR 3.6.1.3.7 (continued)

position, since these valves were verified to be in the correct position prior to locking or securing. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SR 3.6.1.3.8

Verifying the isolation time of each power operated and each automatic PCIV is within limits is required to demonstrate OPERABILITY. MSIVs may be excluded from this SR since MSIV full closure isolation time is demonstrated by SR 3.6.1.3.9. The isolation time test ensures that the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time and Frequency of this SR are in accordance with the requirements of the Inservice Testing Program.

SR 3.6.1.3.9

Verifying that the isolation time of each MSIV is within the specified limits is required to demonstrate OPERABILITY. The isolation time test ensures that the MSIV will isolate in a time period that does not exceed the times assumed in the DBA analyses. This ensures that the calculated radiological consequences of these events remain within 10 CFR 100 limits. The Frequency of this SR is in accordance with the requirements of the Inservice Testing Program.

SR 3.6.1.3.10

Automatic PCIVs close on a primary containment isolation signal to prevent leakage of radioactive material from primary containment following a DBA. This SR ensures that each automatic PCIV will actuate to its isolation position on a primary containment isolation signal. The LOGIC SYSTEM

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SR 3.6.1.3.10 (continued)

FUNCTIONAL TEST in LCO 3.3.6.1 overlaps this SR to provide complete testing of the safety function. The 24 month Frequency was developed considering it is prudent that this Surveillance be performed only during a unit outage since isolation of penetrations would eliminate cooling water flow and disrupt the normal operation of many critical components. Operating experience has shown that these components will usually pass this Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.3.11

This SR requires a demonstration that each reactor instrumentation line excess flow check valve (EFCV) is OPERABLE by verifying that the valve actuates to the isolation position on a simulated instrument line break signal. This SR provides assurance that the instrumentation line EFCVs will perform so that predicted radiological consequences will not be exceeded during a postulated instrument line break event. While this Surveillance can be performed with the reactor at power for some of the EFCVs, operating experience has shown that these components will usually pass this Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.3.12

The TIP shear isolation valves are actuated by explosive charges. An in place functional test is not possible with this design. The explosive squib is removed and tested to provide assurance that the valves will actuate when required. The replacement charge for the explosive squib shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of the batch successfully fired. The Frequency of 24 months on a STAGGERED TEST BASIS is considered adequate given the administrative controls on replacement charges and the frequent checks of circuit continuity (SR 3.6.1.3.6).

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.3.3 -----NOTE-----            Not required to be met when the 6 inch or 18 inch primary containment purge and 18 inch primary containment exhaust valves are open for inerting, de-inerting, pressure control, ALARA or air quality considerations for personnel entry, or Surveillances that require the valves to be open.            -----            Verify each 6 inch and 18 inch primary containment purge valve and each 18 inch primary containment exhaust valve is closed.</p>	<p>31 days</p>
<p>SR 3.6.1.3.4 -----NOTES-----            1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.            2. Not required to be met for PCIVs that are open under administrative controls.            3. Not required to be performed for test taps with a diameter <math>\leq 1</math> inch.            -----            Verify each primary containment isolation manual valve and blind flange that is located outside primary containment and is required to be closed during accident conditions is closed.</p>	<p>31 days</p>

(continued)

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SR 3.6.1.3.3 (continued)

valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other PCIV requirements discussed in SR 3.6.1.3.4.

SR 3.6.1.3.4

This SR verifies that each primary containment isolation manual valve and blind flange that is located outside primary containment and is required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the primary containment boundary is within design limits.

This SR does not require any testing or valve manipulation. Rather, it involves verification that those PCIVs outside primary containment, and capable of being mispositioned, are in the correct position. Since verification of valve position for PCIVs outside primary containment is relatively easy, the 31 day Frequency was chosen to provide added assurance that the PCIVs are in the correct positions.

Three Notes have been added to this SR. The first Note allows valves and blind flanges located in high radiation areas to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable since the primary containment is inerted and access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these PCIVs, once they have been verified to be in the proper position, is low. A second Note has been included to clarify that PCIVs that are open under administrative controls are not required to meet the SR during the time that the PCIVs are open. A third Note states that performance of the SR is not required for test taps with a diameter  $\leq 1$  inch. It is the intent that this SR must still be met, but actual performance is not required for test taps with a diameter  $\leq 1$  inch. The Note 3 allowance is consistent with the original plant licensing basis.

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SR 3.6.1.3.5

This SR verifies that each primary containment manual isolation valve and blind flange that is located inside primary containment and is required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the primary containment boundary is within design limits. For PCIVs inside primary containment, the Frequency defined as "prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days" is appropriate since these PCIVs are operated under administrative controls and the probability of their misalignment is low.

Two Notes have been added to this SR. The first Note allows valves and blind flanges located in high radiation areas to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable since the primary containment is inerted and access to these areas is typically restricted during MODES 1, 2, and 3 for ALARA reasons. Therefore, the probability of misalignment of these PCIVs, once they have been verified to be in their proper position, is low. A second Note has been included to clarify that PCIVs that are open under administrative controls are not required to meet the SR during the time that the PCIVs are open.

SR 3.6.1.3.6

The traversing incore probe (TIP) shear isolation valves are actuated by explosive charges. Surveillance of explosive charge continuity provides assurance that TIP valves will actuate when required. Other administrative controls, such as those that limit the shelf life of the explosive charges, must be followed. The 31 day Frequency is based on operating experience that has demonstrated the reliability of the explosive charge continuity.

SR 3.6.1.3.7

Verifying the correct alignment for each manual valve in the SGIG System required flow paths provides assurance that the proper flow paths exist for system operation. This SR does not apply to valves that are locked or otherwise secured in

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SR 3.6.1.3.7 (continued)

position, since these valves were verified to be in the correct position prior to locking or securing. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SR 3.6.1.3.8

Verifying the isolation time of each power operated and each automatic PCIV is within limits is required to demonstrate OPERABILITY. MSIVs may be excluded from this SR since MSIV full closure isolation time is demonstrated by SR 3.6.1.3.9. The isolation time test ensures that the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time and Frequency of this SR are in accordance with the requirements of the Inservice Testing Program.

SR 3.6.1.3.9

Verifying that the isolation time of each MSIV is within the specified limits is required to demonstrate OPERABILITY. The isolation time test ensures that the MSIV will isolate in a time period that does not exceed the times assumed in the DBA analyses. This ensures that the calculated radiological consequences of these events remain within 10 CFR 100 limits. The Frequency of this SR is in accordance with the requirements of the Inservice Testing Program.

SR 3.6.1.3.10

Automatic PCIVs close on a primary containment isolation signal to prevent leakage of radioactive material from primary containment following a DBA. This SR ensures that each automatic PCIV will actuate to its isolation position on a primary containment isolation signal. The LOGIC SYSTEM

(continued)

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SR 3.6.1.3.10 (continued)

FUNCTIONAL TEST in LCO 3.3.6.1 overlaps this SR to provide complete testing of the safety function. The 24 month Frequency was developed considering it is prudent that this Surveillance be performed only during a unit outage since isolation of penetrations would eliminate cooling water flow and disrupt the normal operation of many critical components. Operating experience has shown that these components will usually pass this Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.3.11

This SR requires a demonstration that each reactor instrumentation line excess flow check valve (EFCV) is OPERABLE by verifying that the valve actuates to the isolation position on a simulated instrument line break signal. This SR provides assurance that the instrumentation line EFCVs will perform so that predicted radiological consequences will not be exceeded during a postulated instrument line break event. While this Surveillance can be performed with the reactor at power for some of the EFCVs, operating experience has shown that these components will usually pass this Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.3.12

The TIP shear isolation valves are actuated by explosive charges. An in place functional test is not possible with this design. The explosive squib is removed and tested to provide assurance that the valves will actuate when required. The replacement charge for the explosive squib shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of the batch successfully fired. The Frequency of 24 months on a STAGGERED TEST BASIS is considered adequate given the administrative controls on replacement charges and the frequent checks of circuit continuity (SR 3.6.1.3.6).

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DISCUSSION OF CHANGES  
ITS 3.6.1.3: PRIMARY CONTAINMENT ISOLATION VALVES (PCIVs)

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

- M<sub>4</sub> Proposed Action F is a new Specification which was added in the event any Required Action and associated Completion Time cannot be met in Modes 4 and 5. The plant must be placed in a condition in which the LCO does not apply. In this case, suspension of operations with a potential for draining the reactor vessel (OPDRVs) is required to minimize the probability of a vessel draindown and subsequent potential fission product release. Suspending an OPDRV may result in closing the RHR SDC isolation valves. Therefore, an alternative Required Action is provided to immediately initiate action to restore the valve(s) to OPERABLE status. This allows RHR to remain in service while actions are being taken to restore the valve. This is a new requirement and as such is an additional restriction on plant operation.
- M<sub>5</sub> An Action is proposed to be added for one or more penetration flow paths with two PCIVs inoperable except for MSIV leakage not within limit. This Action will require the penetration to be isolated by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange within 1 hour. If not isolated within 1 hour then a shutdown should commence and the plant is required to be in MODE 3 within 12 hours and MODE 4 within 36 hours. If this condition would presently exist, the current Technical Specifications (3.7.A.3) require that the primary containment be declared inoperable and allow 24 hours to restore it or the plant is required to be in Hot Shutdown (MODE 3) within 12 hours and Cold Shutdown within 24 hours. The current Technical Specifications would allow 23 more hours than the proposed Technical Specifications to restore primary containment. This proposed change represents a more restrictive change and is consistent with NUREG-1433.
- M<sub>6</sub> Eight Surveillance Requirements (SRs) were added. These surveillances will:
- Verify SGIG System header pressure;
  - Verify 6 inch and 18 inch primary containment purge valves and 18 inch primary containment exhaust valves are closed and blocked to restrict opening to less than or equal to the required maximum opening angle;

DISCUSSION OF CHANGES  
ITS 3.6.1.3: PRIMARY CONTAINMENT ISOLATION VALVES (PCIVs)

TECHNICAL CHANGES - MORE RESTRICTIVE

M<sub>6</sub>  
(cont'd)

- Verify PCIV manual valves and blind flanges that are located outside and inside primary containment and are required to be closed are closed. (For PCIVs outside primary containment, a note has been provided that exempts test taps with a diameter  $\leq 1$  inch from the verification. The provision of this note is consistent with the PBAPS current licensing basis. It is still the intent that the SR must be met, but actual performance is not required. The test taps covered by this note consist of at least one valve and a cap such that sufficient redundancy exists to maintain primary containment OPERABILITY in the event of a mispositioned valve or missing cap. Additionally, the occurrence of test tap valve misalignments has been rare at PBAPS.);
- Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge, and remove and test them; and
- Verify SGIG lineup.

These SRs provide the means of ensuring the PCIVs are Operable and able to perform their safety function which is to provide primary containment isolation. The addition of new Surveillance Requirements constitutes a more restrictive change.

M<sub>7</sub>

An Action is proposed to be added when one or more penetration flow paths with one PCIV inoperable for penetration flow paths with only one PCIV. This action would require the penetration to be isolated within 4 hours or the plant should be in MODE 3 within 12 hours and MODE 4 within 36 hours. If this condition would presently exist, the current Technical Specifications (3.7.A.3) require that the primary containment be declared inoperable and allow 24 hours to restore it or the plant is required to be in Hot Shutdown (MODE 3) within 12 hours and Cold Shutdown within 24 hours. The current Technical Specifications would allow 20 more hours than the proposed Technical Specifications to restore primary containment. This proposed change represents a more restrictive change. This change is consistent with NUREG-1433.

M<sub>8</sub>

This change proposes to add Actions to verify the penetrations which were isolated remain isolated every 31 days for isolation devices outside primary containment and prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days, for isolation devices inside primary containment. The 31 days is reasonable because the valves

DISCUSSION OF CHANGES  
ITS 3.6.1.3: PRIMARY CONTAINMENT ISOLATION VALVES (PCIVs)

TECHNICAL CHANGES - MORE RESTRICTIVE

- M<sub>8</sub>  
(cont'd) are operated under administrative controls and the probability of their misalignment is low. The frequency for valves inside containment is considered reasonable in view of the inaccessibility of the valves and other administrative controls ensuring that valve misalignment is an unlikely possibility. These Actions are modified by a note that applies to valves and blind flanges located in high radiation areas, and allows them to be verified by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is low.
- M<sub>9</sub> This change adds details on isolating instrument line penetrations with excess flow check valves (EFCVs) and purge and exhaust isolation valves. This change will require that the penetrations be isolated by use of at least one closed and de-activated automatic valve, closed manual valve or blind flange. This requirement adds details to an Action which constitute a more restrictive change. This change is consistent with NUREG-1433.
- M<sub>10</sub> This change adds acceptance criteria to the Surveillance Requirement which requires an Operability test of the instrument line EFCVs. The acceptance criteria added requires that the EFCVs actuate to the isolation position on a simulated instrument line break signal. The addition of acceptance criteria which did not previously exist in Technical Specifications to a Surveillance Requirement constitutes a more restrictive change.
- M<sub>11</sub> The note which specifies that isolation valves closed to comply with the Actions may be opened under administrative controls was revised to make an exception to primary containment purge and exhaust isolation valves. In this case, the valves should not be allowed to be opened because of the gross breach of containment situation which could exist.
- M<sub>12</sub> The frequency for performing the closure time testing for power operated and automatically initiated valves is being changed from "at least once per operating cycle" to "In accordance with the IST Program." Since the current IST Program requires testing of some PCIVs every quarter, this change is more restrictive.

DISCUSSION OF CHANGES  
ITS 3.6.1.3: PRIMARY CONTAINMENT ISOLATION VALVES (PCIVs)

TECHNICAL CHANGES - RELOCATIONS

- R<sub>1</sub> The list of the PCIVs will be relocated to a licensee controlled document. This is consistent with the guidance provided for PCIVs in Generic Letter 91-08 and consistent with NUREG-1433. Any changes to these tables will require a 10 CFR 50.59 evaluation.
- R<sub>2</sub> Not used.
- R<sub>3</sub> The requirement, specifying the PCIVs be demonstrated Operable prior to being returned to service after maintenance on or replacement of the valve, actuator, control or power circuit by performance of a cycling test, and verification of isolation time, will be relocated to post maintenance procedures. Any time the Operability of a system or component has been affected by the repair, maintenance, or replacement, post maintenance testing is required to demonstrate Operability of the system or components. Explicit post maintenance Surveillance Testing has therefore been deleted from the Technical Specifications and will be relocated to the appropriate licensee controlled document (e.g., a general statement in the maintenance control procedure). This change is consistent with NUREG-1433.
- R<sub>4</sub> Not used.
- R<sub>5</sub> The details of the surveillance specifying that all normally open power operated isolation valves (except for the MSIVs) shall be fully closed and reopened will be relocated to the plant procedures implementing the requirements of the IST program. Any changes to this requirement will require a 10 CFR 50.59 evaluation. This change is consistent with NUREG-1433.
- R<sub>6</sub> The current requirement for power to be < 75% to perform MSIV isolation time testing will be relocated to the plant procedures implementing the requirements of the IST program for MSIV stroke timing. Any changes to this requirement will require a 10 CFR 50.59 evaluation. This change is consistent with NUREG-1433.
- R<sub>7</sub> The requirement to exercise the main steam line power-operated isolation valves by partial closure and subsequent opening will be relocated to the IST program and the procedures implementing the IST program. Any changes to this requirement will require a 10 CFR 50.59 evaluation. This change is consistent with NUREG-1433.
- R<sub>8</sub> The requirement specifying the LLRT for the large containment ventilation isolation valves be compared to the previously measured leak rate to detect excessive valve degradation will be relocated to

NO SIGNIFICANT HAZARDS CONSIDERATIONS  
SECTION 3.6--CONTAINMENT SYSTEMS

TECHNICAL CHANGES - MORE RESTRICTIVE

(M<sub>1</sub>, M<sub>2</sub>, M<sub>3</sub>, M<sub>4</sub>, M<sub>5</sub>, M<sub>6</sub>, M<sub>7</sub>, M<sub>8</sub>, M<sub>9</sub>, M<sub>10</sub>, M<sub>11</sub>, and M<sub>12</sub> Labeled Comments/Discussions for ITS 3.6.1.3)

M<sub>4</sub>  
(cont'd) operations with a potential for draining the reactor vessel (OPDRVs) is required to minimize the probability of a vessel draindown and subsequent potential fission product release. Suspending an OPDRV may result in closing the RHR SDC isolation valves. Therefore, an alternative Required Action is provided to immediately initiate action to restore the valve(s) to OPERABLE status. This allows RHR to remain in service while actions are being taken to restore the valve. This is a new requirement and as such is an additional restriction on plant operation.

M<sub>5</sub> An Action is proposed to be added for one or more penetration flow paths with two PCIVs inoperable except for MSIV leakage not within limit. This Action will require the penetration to be isolated by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange within 1 hour. If not isolated within 1 hour then a shutdown should commence and the plant is required to be in MODE 3 within 12 hours and MODE 4 within 36 hours. If this condition would presently exist, the current Technical Specifications (3.7.A.3) require that the primary containment be declared inoperable and allow 24 hours to restore it or the plant is required to be in Hot Shutdown (MODE 3) within 12 hours and Cold Shutdown within 24 hours. The current Technical Specifications would allow 23 more hours than the proposed Technical Specifications to restore primary containment. This proposed change represents a more restrictive change and is consistent with NUREG-1433.

M<sub>6</sub> Eight Surveillance Requirements (SRs) were added. These surveillances will:

- Verify SGIG System header pressure;
- Verify 6 inch and 18 inch primary containment purge valves and 18 inch primary containment exhaust valves are closed and blocked to restrict opening to less than or equal to the required maximum opening angle;
- Verify PCIV manual valves and blind flanges that are located outside and inside primary containment and are required to be closed are closed. (For PCIVs outside primary containment, a note has been provided that exempts test taps with a diameter  $\leq 1$  inch from the verification. The provision of this note is consistent with the PBAPS current licensing basis. It is



NO SIGNIFICANT HAZARDS CONSIDERATIONS  
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TECHNICAL CHANGES - MORE RESTRICTIVE

(M<sub>1</sub>, M<sub>2</sub>, M<sub>3</sub>, M<sub>4</sub>, M<sub>5</sub>, M<sub>6</sub>, M<sub>7</sub>, M<sub>8</sub>, M<sub>9</sub>, M<sub>10</sub>, M<sub>11</sub>, and M<sub>12</sub> Labeled Comments/Discussions for ITS 3.6.1.3)

M<sub>6</sub>  
(cont'd) still the intent that the SR must be met, but actual performance is not required. The test taps covered by this note consist of at least one valve and a cap such that sufficient redundancy exists to maintain primary containment OPERABILITY in the event of a mispositioned valve or missing cap. Additionally, the occurrence of test tap valve misalignments has been rare at PBAPS.);

- Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge, and remove and test them;
- Verify SGIG lineup.

These SRs provide the means of ensuring the PCIVs are Operable and able to perform their safety function which is to provide primary containment isolation. The addition of new Surveillance Requirements constitutes a more restrictive change.

M<sub>7</sub> An Action is proposed to be added when one or more penetration flow paths with one PCIV inoperable for penetration flow paths with only one PCIV. This action would require the penetration to be isolated within 4 hours or the plant should be in MODE 3 within 12 hours and MODE 4 within 36 hours. If this condition would presently exist, the current Technical Specifications (3.7.A.3) require that the primary containment be declared inoperable and allow 24 hours to restore it or the plant is required to be in Hot Shutdown (MODE 3) within 12 hours and Cold Shutdown within 24 hours. The current Technical Specifications would allow 20 more hours than the proposed Technical Specifications to restore primary containment. This proposed change represents a more restrictive change. This change is consistent with NUREG-1433.

M<sub>8</sub> This change proposes to add Actions to verify the penetrations which were isolated remain isolated every 31 days for isolation devices outside primary containment and prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days, for isolation devices inside primary containment. The 31 days is reasonable because the valves are operated under administrative controls and the probability of their misalignment is low. The frequency for valves inside containment is considered reasonable in view of the inaccessibility of the valves and other administrative controls ensuring that valve misalignment is an unlikely possibility. These Actions are modified



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(M<sub>1</sub>, M<sub>2</sub>, M<sub>3</sub>, M<sub>4</sub>, M<sub>5</sub>, M<sub>6</sub>, M<sub>7</sub>, M<sub>8</sub>, M<sub>9</sub>, M<sub>10</sub>, M<sub>11</sub>, and M<sub>12</sub> Labeled Comments/Discussions for ITS 3.6.1.3)

- M<sub>8</sub>  
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- M<sub>10</sub>           This change adds acceptance criteria to the Surveillance Requirement which requires an Operability test of the instrument line EFCVs. The acceptance criteria added requires that the EFCVs actuate to the isolation position on a simulated instrument line break signal. The addition of acceptance criteria which did not previously exist in Technical Specifications to a Surveillance Requirement constitutes a more restrictive change.
- M<sub>11</sub>           The note which specifies that isolation valves closed to comply with the Actions may be opened under administrative controls was revised to make an exception to primary containment purge and exhaust isolation valves. In this case, the valves should not be allowed to be opened because of the gross breach of containment situation which could exist.
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## SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.3 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. DG loadings may include gradual loading as recommended by the manufacturer.</li> <li>2. Momentary transients outside the load range do not invalidate this test.</li> <li>3. This Surveillance shall be conducted on only one DG at a time.</li> <li>4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7.</li> <li>5. A single test will satisfy this Surveillance for both units, with synchronization to the Unit 2 4 kV emergency bus for one periodic test and synchronization to the Unit 3 4 kV emergency bus during the next periodic test. However, if the test is not performed on Unit 3, then the test shall be performed synchronized to the Unit 2 4 kV emergency bus.</li> </ol> <p>-----</p> <p>Verify each DG is synchronized and loaded and operates for <math>\geq 60</math> minutes at a load <math>\geq 2400</math> kW and <math>\leq 2600</math> kW.</p>	31 days
<p>SR 3.8.1.4      Verify each day tank contains <math>\geq 250</math> gal of fuel oil.</p>	31 days
<p>SR 3.8.1.5      Check for and remove accumulated water from each day tank.</p>	31 days

(continued)

### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

#### ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each DG.  
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CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with fuel oil level < 31,000 gal and > 27,500 gal in storage tank.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory < 350 gal and > 300 gal.	B.1 Restore lube oil inventory to within limits.	48 hours
C. One or more DGs with stored fuel oil total particulates not within limit.	C.1 Restore fuel oil total particulates to within limit.	7 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains $\geq 31,000$ gal of fuel.	31 days
SR 3.8.3.2	Verify lube oil inventory is $\geq 350$ gal.	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each DG air start receiver pressure is $\geq 225$ psig.	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	31 days

BASES

SURVEILLANCE  
REQUIREMENTS  
(continued)

SR 3.8.1.4

This SR provides verification that the level of fuel oil in the day tank is adequate for a minimum of 1 hour of DG operation at full load. The level, which includes margin to account for the unusable volume of oil, is expressed as an equivalent volume in gallons.

The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, since low level alarms are provided and facility operators would be aware of any large uses of fuel oil during this period.

SR 3.8.1.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel oil day tanks once every 31 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are consistent with Regulatory Guide 1.137 (Ref. 9). This SR is for preventive maintenance. The presence of water does not necessarily represent a failure of this SR provided that accumulated water is removed during performance of this Surveillance.

SR 3.8.1.6

This Surveillance demonstrates that each required fuel oil transfer pump operates and automatically transfers fuel oil from its associated storage tank to its associated day tank. It is required to support continuous operation of standby power sources. This Surveillance provides assurance that

(continued)

BASES

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ACTIONS  
(continued)

A.1

With fuel oil level < 31,000 gal in a storage tank (which includes margin for the unusable volume of oil), the 7 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply. These circumstances may be caused by events such as:

- a. Full load operation required for an inadvertent start while at minimum required level; or
- b. Feed and bleed operations that may be necessitated by increasing particulate levels or any number of other oil quality degradations.

This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of the fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

B.1

With lube oil inventory < 350 gal, sufficient lube oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time for obtaining the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

(continued)

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## SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.3 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. DG loadings may include gradual loading as recommended by the manufacturer.</li> <li>2. Momentary transients outside the load range do not invalidate this test.</li> <li>3. This Surveillance shall be conducted on only one DG at a time.</li> <li>4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7.</li> <li>5. A single test will satisfy this Surveillance for both units, with synchronization to the Unit 3 4 kV emergency bus for one periodic test and synchronization to the Unit 2 4 kV emergency bus during the next periodic test. However, if the test is not performed on Unit 2, then the test shall be performed synchronized to the Unit 3 4 kV emergency bus.</li> </ol> <p>-----</p> <p>Verify each DG is synchronized and loaded and operates for <math>\geq 60</math> minutes at a load <math>\geq 2400</math> kW and <math>\leq 2600</math> kW.</p>	31 days
<p>SR 3.8.1.4      Verify each day tank contains <math>\geq 250</math> gal of fuel oil.</p>	31 days
<p>SR 3.8.1.5      Check for and remove accumulated water from each day tank.</p>	31 days

(continued)

### 3.8 ELECTRICAL POWER SYSTEMS

#### 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

#### ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each DG.  
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CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with fuel oil level < 31,000 gal and > 27,500 gal in storage tank.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory < 350 gal and > 300 gal.	B.1 Restore lube oil inventory to within limits.	48 hours
C. One or more DGs with stored fuel oil total particulates not within limit.	C.1 Restore fuel oil total particulates to within limit.	7 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains $\geq 31,000$ gal of fuel.	31 days
SR 3.8.3.2	Verify lube oil inventory is $\geq 350$ gal.	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each DG air start receiver pressure is $\geq 225$ psig.	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	31 days

BASES

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SURVEILLANCE  
REQUIREMENTS  
(continued)

SR 3.8.1.4

This SR provides verification that the level of fuel oil in the day tank is adequate for a minimum of 1 hour of DG operation at full load. The level, which includes margin to account for the unusable volume of oil, is expressed as an equivalent volume in gallons.

The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, since low level alarms are provided and facility operators would be aware of any large uses of fuel oil during this period.

SR 3.8.1.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel oil day tanks once every 31 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are consistent with Regulatory Guide 1.137 (Ref. 9). This SR is for preventive maintenance. The presence of water does not necessarily represent a failure of this SR provided that accumulated water is removed during performance of this Surveillance.

SR 3.8.1.6

This Surveillance demonstrates that each required fuel oil transfer pump operates and automatically transfers fuel oil from its associated storage tank to its associated day tank. It is required to support continuous operation of standby power sources. This Surveillance provides assurance that

(continued)

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BASES

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ACTIONS  
(continued)

A.1

With fuel oil level < 31,000 gal in a storage tank (which includes margin for the unusable volume of oil), the 7 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply. These circumstances may be caused by events such as:

- a. Full load operation required for an inadvertent start while at minimum required level; or
- b. Feed and bleed operations that may be necessitated by increasing particulate levels or any number of other oil quality degradations.

This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of the fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

B.1

With lube oil inventory < 350 gal, sufficient lube oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time for obtaining the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

(continued)

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3.9 AUXILIARY ELECTRICAL SYSTEM

Applicability:

Applies to the auxiliary electrical power system.

Objective:

To assure an adequate supply of electrical power for operation of those systems required for safety.

Specification:

Auxiliary Electrical Equipment

4.9 AUXILIARY ELECTRICAL SYSTEM

Applicability

Applies to the periodic testing requirements of the auxiliary electrical systems.

Objective:

Verify the operability of the auxiliary electrical system.

Specification:

A. Auxiliary Electrical Equipment

Imm Modes 1, 2 and 3

(See CTS page 219)

The reactor shall not be made critical unless all of the following conditions are satisfied:

1. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system are operable.

LCO 3.8.1.a

LCO 3.8.1.b

2. The four diesel generators shall be operable and there shall be a minimum of 108,000 gallons of diesel fuel on site. Each operable diesel generator shall have:

M12

LCO 3.8.1.c  
LCO 3.8.1.d

1. A separate day tank containing a minimum of 250 gallons of fuel.

2. A separate fuel storage tank with a minimum of 28,000 gallons of fuel, and

SR 3.8.1.6

(See CTS page 218)

3. The unit 4kV emergency buses and the 480V emergency load centers are energized.

4. The four unit 125V batteries and their chargers shall be operable.

See Discussion of Changes for ITS 3.8.7, Dist. Sys - Operating

See Discussion of Changes for ITS 3.8.4, DC Sources - Operating

1. Diesel Generators and Offsite Circuits

SR 3.8.1.1 and 6R 3.8.1.8

Each of the required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

Verified OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

SR 3.8.1.1

Demonstrated OPERABLE at least once per 24 months by transferring, manually and automatically, the start-up source from the normal circuit to the alternate circuit.

SR 3.8.1.8

Note to SR 3.8.1.8



### 3.9 AUXILIARY ELECTRICAL SYSTEM

#### Applicability:

Applies to the auxiliary electrical power system.

#### Objective:

To assure an adequate supply of electrical power for operation of those systems required for safety.

#### Specification:

#### Auxiliary Electrical Equipment

### 4.9 AUXILIARY ELECTRICAL SYSTEM

#### Applicability:

Applies to the periodic testing requirements of the auxiliary electrical systems.

#### Objective:

Verify the operability of the auxiliary electrical system.

#### Specification:

#### Auxiliary Electrical Equipment

(M<sub>1</sub>)

In Modes 1, 2 and 3 (See CTS p.219)

(A<sub>1</sub>)

The reactor shall not be made critical unless all of the following conditions are satisfied:

1. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system are operable.

LCO 3.8.1.a

LCO 3.8.1.b

2. The four diesel generators shall be operable and there shall be a minimum of 108,000 gallons of diesel fuel on site. Each operable diesel generator shall have:

LCO 3.8.1.c  
LCO 3.8.1.d

(M<sub>12</sub>)

SR 3.8.1.4

- a. A separate day tank containing a minimum of 200 gallons of fuel.

Verify every 31 days

(M<sub>2</sub>)

- b. A separate fuel storage tank with a minimum of 28,000 gallons of fuel, and

See Discussion of Changes ITS 3.8.3, Fuel Oil, Lubric Oil, Starting Air

- c. A separate fuel transfer pump.

SR 3.8.1.6 (See CTS page 218)

3. The unit 4KV emergency buses and the 480V emergency load centers are energized.

See Discussion of Changes for ITS 3.8.7, Dist. Sys. - Operating

4. The four unit 125V batteries and their chargers shall be operable.

See Discussion of Changes for ITS 3.8.4, DC Sources - Oper.

1. Diesel Generators and Offsite Circuits

(A<sub>1</sub>)

1. Each of the required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

SR 3.8.1.1

and

SR 3.8.1.8

- a. Verified OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

SR 3.8.1.1

- b. Demonstrated OPERABLE at least once per 24 months by transferring, manually and automatically, the start-up source from the normal circuit to the alternate circuit.

SR 3.8.1.8

Unit power supply

Note to SR 3.8.1.8

(M<sub>3</sub>)

AUG 02 1993 (A<sub>1</sub>)

-217-

Amendment No. 152, 176, 182 (A<sub>1</sub>)

DISCUSSION OF CHANGES  
ITS 3.8.1: AC SOURCES—OPERATING

ADMINISTRATIVE CHANGES (continued)

- A<sub>3</sub> Proposed SR 3.8.1.11, SR 3.8.1.12, SR 3.8.1.13, and SR 3.8.1.19 will be modified by a Note allowing an unplanned event to satisfy the requirements of these SRs. This assumes that the data collected is sufficient to satisfy all required acceptance criteria. Since these tests are currently performed using simulated signals, explicit recognition that these tests can also be satisfied using an actual signal is an administrative change because a test without pre-lube or warmup is a more realistic test so the change constitutes permission to perform a more realistic test. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.

TECHNICAL CHANGES - MORE RESTRICTIVE

- M<sub>1</sub> Proposed Specification 3.8.1, AC Sources—Operating, will be applicable at all times in Modes 1, 2, and 3. This applicability is more restrictive than existing Specification 3.9.A which requires that "the reactor shall not be made critical unless" the specified AC sources are Operable and associated Surveillances Requirements met. This is also more restrictive than existing Specification 3.9.B which requires that the Required Actions for inoperable equipment must be implemented "Whenever the reactor is in Run Mode or Startup Mode with the reactor not in a Cold Condition" and the applicable requirements of existing Specification 3.2.B. The proposed change establishes requirements for the Operability of AC sources consistent with the Operability requirements for the functions that these AC sources are required to support including the Emergency Core Cooling Systems and Primary Containment Isolation. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.
- M<sub>2</sub> Proposed SR 3.8.1.4 will require verification every 31 days that each DG day tank contains at least 250 gallons of fuel oil. Existing Specification 3.9.A.2.a requires that the day tank of each Operable DG contain at least 200 gallons of fuel oil but has no requirement for periodic verification. SR 3.8.1.4 provides verification that sufficient fuel oil (including margin to account for unusable volume) to operate the DG for at least one hour is available at the DG so that operators will have time to identify and

DISCUSSION OF CHANGES  
ITS 3.8.1: AC SOURCES—OPERATING

TECHNICAL CHANGES - MORE RESTRICTIVE

- M<sub>2</sub>  
(cont'd) respond to the failure of a fuel oil transfer pump. Additionally, this SR ensures that the fuel oil transfer pump is maintaining the day tank level above the level at which fuel oil is automatically added. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.
- M<sub>3</sub> Proposed SR 3.8.1.8, SR 3.8.1.11, SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19 have the potential to cause perturbations to the Electrical Distribution System that could challenge continued steady state operation and, as a result, plant safety systems. Therefore, these SRs will be modified by a Note that states these SRs shall not be performed if the associated unit is in Mode 1 or 2 or Modes 1, 2, or 3 (for SR 3.8.1.11, SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19). However credit is allowed to be taken for unplanned events that satisfy these SRs. The Note is intended to ensure that the unit most affected by the test is shutdown when the test is performed. Performing these SRs while the unit most affected by the test is shutdown is consistent with current practice; however, the explicit statement of this requirement constitutes a more restrictive change. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.
- M<sub>4</sub> Proposed SR 3.8.1.2 and existing Specification 4.9.A.1.2.a.3 both require that the DG starting demonstration test be performed once every 31 days and whenever demonstration of DG Operability is required. Both the proposed and the existing specifications are modified by Notes that allow the use of engine pre-lube and gradual acceleration (slow start) as recommended by the manufacturer in order to minimize stress and wear on the DGs. However, proposed SR 3.8.1.2 will be modified by a Note that requires that if the gradual warmup procedure is not used (i.e., fast start), then the acceptance criteria for time, voltage and frequency associated with the fast start in proposed SR 3.8.1.7 must be applied to SR 3.8.1.2. This change ensures that any start performed in accordance with the fast start procedure must meet the acceptance criteria for a fast start. This ensures that problems with DG starting capability are identified as soon as possible and that DG starting data is collected in accordance with Regulatory Guide 1.9 is accurate. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.

DISCUSSION OF CHANGES  
ITS 3.8.1: AC SOURCES—OPERATING

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

- M<sub>5</sub> Proposed SR 3. .1.3 and existing Specification 4.9.A.1.2.a.5 both require that each DG be synchronized with an offsite source and operated at full load for at least 60 minutes. Proposed SR 3.8.1.3 includes a Note that this Surveillance should be conducted on only one DG at a time in order to avoid loss of multiple DGs concurrent with a loss of offsite power. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.
- M<sub>6</sub> A new SR has been added to ensure the test override feature is functioning properly. This feature is scheduled to be installed by Fall 1995. This SR is consistent with NUREG-1433 and is an additional restriction on plant operation.
- M<sub>7</sub> Proposed SR 3.8.1.9 (largest load rejection), SR 3.8.1.10 (full load rejection), and SR 3.8.1.14 (24 hour load test) all verify DG capabilities required during a loss of offsite power. In each case, the DG can be tested while synchronized with offsite sources. The proposed SRs will require that these tests be performed at a power factor corresponding to the actual design basis inductive loading that the DG would experience ( $< 0.89$  lagging). However, if grid conditions do not permit the DG to operate at the required power factor, SR 3.8.1.14 may be conducted with the power factor as close as possible to the specified value. Additionally, a Note was added to SR 3.8.1.14 recognizing that momentary transients in DG loading or power factor will not invalidate the test. These changes make the test more representative of the conditions expected during an accident and is consistent with the BWR Standard Technical Specifications, NUREG-1433.
- M<sub>8</sub> Proposed SR 3.8.1.15 and existing Specification 4.9.A.1.2.g.5 both verify DG hot restart capability by attempting a DG restart within 5 minutes after completing the 24 hour full load run. If the hot restart test is not completed immediately following the full load run, both the proposed and the existing specifications allow the DG hot restart to be performed after a shorter run. The existing specification (Note c) requires initial conditions based on operating the DG for "1 hour or until operating temperature has stabilized." Proposed SR 3.8.1.15 will require that the DG be operated at full load for greater than 2 hours, a period based on manufacturer recommendations for achieving hot conditions. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.

DISCUSSION OF CHANGES  
ITS 3.8.1: AC SOURCES—OPERATING

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)

- M<sub>9</sub> Proposed SR 3.8.1.12 and existing Specification 4.9.A.1.2.h.2 both test DG response to an ECCS actuation signal without loss of offsite power. However, proposed SR 3.8.1.12 will also verify proper plant response by requiring verification that "Permanently connected loads remain energized" and "Emergency loads are energized or auto-connected through individual load timers to the offsite source." This change is consistent with the BWR Standard Technical Specifications, NUREG-1433, and the PBAPS design.
- M<sub>10</sub> Proposed SR 3.8.1.20 and existing Specification 4.9.A.1.2.i both require simultaneous starting of all four DGs every 10 years. The existing specification requires that the DGs "accelerate to at least 855 rpm (57 Hz) in less than or equal to 10 seconds" whereas the proposed specification will require that all four DGs achieve the nominal voltage (4160 V) and frequency (58.8 Hz) within 10 seconds. This change is more restrictive than current requirements.
- M<sub>11</sub> The proposed Required Actions for one offsite circuit inoperable and one DG inoperable (without the Conowingo Tie-Line available) will be modified to include a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet LCO 3.8.1.a or b. This new restriction is intended to prevent exceeding the assumptions regarding allowed out of service times for an AC source as a result of sequential inoperabilities of a DG and offsite source. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.
- M<sub>12</sub> Certain equipment needed to meet Unit 2 accident analysis is powered from the Unit 3 AC Electrical Power System and certain equipment needed to meet Unit 3 accident analysis is powered from the Unit 2 AC Electrical Power System. Currently, the AC sources of the other unit are required since the definition of Operability requires the normal and emergency power sources to be Operable. To make the Technical Specifications more user friendly, the required sources of the other unit have been added. Since the AC sources of the other unit are now described, the current LCO and Actions for AC sources have been modified to address this addition. The Actions for the other unit's AC sources have been made consistent with those of the one unit. However, specifying an explicit allowed out of service time for the other units AC sources make this an additional



DISCUSSION OF CHANGES  
ITS 3.8.1: AC SOURCES—OPERATING

TECHNICAL CHANGES - MORE RESTRICTIVE

- M<sub>12</sub>  
(cont'd) restriction on plant operations. In addition, proposed SR 3.8.1.21 and a Note to the Surveillance Requirements have been added to ensure that the other units AC sources are properly tested and that the proper SRs are applicable for each units AC sources.
- M<sub>13</sub> Existing Specification 3.9.B.2 allows plant operation to continue with two offsite sources inoperable "provided the four diesel generators and associated emergency buses are Operable, all core and containment cooling systems are operable and reactor power is reduced to 25% of design." Under identical conditions, proposed LCO 3.8.1, Condition C, will allow 24 hours to restore all but one required offsite circuit to Operable status or enter Condition F (Mode 3 within 12 hours and Mode 4 within 36 hours). This change is consistent with Regulatory Guide 1.93, Availability of Electrical Power Sources, and the BWR Standard Technical Specifications, NUREG-1433.
- M<sub>14</sub> Not used.
- M<sub>15</sub> Existing Specification 3.9.B.4 has an allowable out of service time of 72 hours for the simultaneous inoperability of one DG and one offsite source. Proposed LCO 3.8.1, Condition D, will reduce the allowable out of service time from 72 hours to 12 hours consistent with the recommendations in Regulatory Guide 1.93, Availability of AC Sources. The basis for the Regulatory Guide 1.93 recommendation is that individual redundancy is lost in both the offsite Electrical Power System and the on-site AC Electrical Power System and this configuration is highly susceptible to a single bus or switching failure. The 12 hour Completion Time takes into account the redundancy, capacity and capability of the remaining AC sources, reasonable time for repairs, and the low probability of a DBA occurring during this period. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.
- M<sub>16</sub> The calibration frequency of the individual load timers has been reduced from once per 5 years to once per 24 months. This calibration will now be performed during SR 3.8.1.18. This change is necessary to ensure that sufficient time exists for the diesel generators to restore frequency and voltage prior to applying the next load and that safety analysis assumptions, regarding ESF equipment time delays are not violated. The 24 month frequency takes into consideration plant conditions required to perform the Surveillance and is consistent with expected fuel cycle lengths. This change represents an additional restriction on plant operation.



3.9 AUXILIARY ELECTRICAL SYSTEM

4.9 AUXILIARY ELECTRICAL SYSTEM

Specification 3.8.3, Diesel Fuel Oil, Lube Oil, and Starting Air.

Applicability:

Applies to the auxiliary electrical power system.

Objective:

To assure an adequate supply of electrical power for operation of those systems required for safety.

Specification:

A. Auxiliary electrical Equipment

Applicability

Applies to the periodic testing requirements or the auxiliary electrical systems.

Objective:

Verify the operability of the auxiliary electrical system.

Specification:

A. Auxiliary Electrical Equipment

1. Diesel Generators and Offsite Circuits

1. Each of the required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

a. Verified OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

b. Demonstrated OPERABLE at least once per 24 months by transferring, manually and automatically, the start-up sources from the normal circuit to the alternate circuit.

(M1) When associated DG is required to be Operable LCO 3.8.3.

1. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system are operable.

2. The four diesel generators shall be operable and there shall be a minimum of 108,000 gallons of diesel fuel on site. Each operable diesel generator shall have:

a. A separate day tank containing a minimum of 200 gallons of fuel,

b. A separate fuel storage tank with a minimum of 31,000 gallons of fuel, and

c. A separate fuel transfer pump.

3. The unit 4kV emergency buses and the 480V emergency bus centers are energized.

4. The four unit 125V batteries and their chargers shall be operable.

Note: Separate Condition Entry is allowed for each DG.

See Discussion of Changes for ITS 3.8.7, Distribution Systems - Operating Amendment No. 149, 173, 179 AUG 02 1993

See Discussion of Changes for ITS 3.8.4, DC Sources - Oper.

See Discussion of Changes for ITS 3.8.1, AC Sources - Operating

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.9.A.1 (Continued)

(A1) 2. Each of the required diesel generators shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in 4.9.A.1.2.1 by:

(L3) every 31 days

1. Verifying the fuel level in the fuel storage tanks and the volume of fuel onsite.

is > 31,000 gal

31,000

E

Condition B and SR 3.8.3.2

SR 3.8.3.1

2. Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day fuel tank.

3. Verifying that the diesel can start\* and gradually accelerate to synchronous speed with generator voltage and frequency at  $4160 \pm 410$  volts and  $60 \pm 1.2$  HZ.

4. Verifying that the diesel can be synchronized, gradually loaded\* to an indicated 2400-2600\* kw and can operate with this load for at least 60 minutes.

5. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

See Discussion of changes for ITS 3.8.1, "AC Source-Operating"

\*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine pre-lube and warmup and, as applicable, loading and shutdown.

\*This load band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing, under direct monitoring by the manufacturer or system engineer, or momentary variations due to changing bus loads shall not invalidate the test.

LIMITING CONDITIONS FOR OPERATION

3.9.B (Continued)

6. With fuel oil in one of the diesel generator main storage tanks ~~not~~ available or not in conformance with Surveillance Requirement 4.9.A.1.2.e implement the following:

a. Isolate the main storage tank from the system, with the associated diesel generator being supplied from one of the remaining storage tanks within 8 hours, and

b. Establish and maintain a minimum of 108,000 gallons of diesel fuel oil in the other three main storage tanks within 72 hours, and

c. Sample the fuel oil in the other three main storage tanks and confirm conformance with specification 4.9.A.1.2.e within 24 hours, and

d. Replace the unacceptable fuel oil with acceptable fuel and return the storage tank to service within 7 days, or place the reactor in cold shutdown within 24 hours.

Accelerated testing of the diesel generators is not required.

7. With one of the 4kV emergency busses or 480V emergency load centers required by 3.9.A.3 not energized, declare the associated equipment inoperable and take the appropriate action for that system.  
Reenergize the bus within 24 hours or be in COLD SHUTDOWN within the following 24 hours.

8. With the Conowingo line inoperable for 15 days, notify the NRC.

SURVEILLANCE REQUIREMENTS

6. None

Condition C

Restore fuel oil total particulate within 7 days

31,000

each

48

Condition A

R3

R1

L2

for Condition C and within 48 hours for Condition A

Declare the associated DGA inoperable immediately

7. None

Condition D

M3

Condition B

8. Verify once/month the operability of the Conowingo line.

See Discussion of change for ITS 3.8.7, "Distribution Systems - Operating"

See Discussion of change for ITS 3.8.1, "AC Source Operating"

### 3.8.3 AUXILIARY ELECTRICAL SYSTEM 3.8.3 Diesel Fuel Oil, Lubricant, and Starting Air

#### Applicability:

Applies to the auxiliary electrical power system.

#### Objective:

To assure an adequate supply of electrical power for operation of those systems required for safety.

#### Specification:

#### A. Auxiliary Electrical Equipment

When associated DG is required to be operable

LC 3.8.3

Note: Separate Condition entry is allowed for each DG

A<sub>2</sub>

Condition A  
See CTS page 22ab

M<sub>2</sub>

The reactor shall not be made critical unless all of the following conditions are satisfied:

1. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system are operable.

2. The four diesel generators shall be operable and there shall be a minimum of 108,000 gallons of diesel fuel on site. Each operable diesel generator shall have:

a. A separate day tank containing a minimum of 200 gallons of fuel.

b. A separate fuel storage tank with a minimum of 28,000 gallons of fuel.

SR 3.8.3.1

BAH

c. A separate fuel transfer pump.

3. The unit 4kV emergency buses and the 480V emergency load centers are energized.

4. The four unit 125V batteries and their chargers shall be operable.

See Discussion of Changes for ITS 3.8.7, "Dist. Sys. Operating"

See Discussion of changes for ITS 3.8.4, "DC Sources - Operating"

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### 4.9 AUXILIARY ELECTRICAL SYSTEM

#### Applicability

Applies to the periodic testing requirements of the auxiliary electrical systems.

#### Objective:

Verify the operability of the auxiliary electrical system.

#### Specification:

#### A. Auxiliary Electrical Equipment

#### 1. Diesel Generators and Offsite Circuits

1. Each of the required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

a. Verified OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

b. Demonstrated OPERABLE at least once per 24 months by transferring, manually and automatically, the start-up source from the normal circuit to the alternate circuit.

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See Discussion of Changes for ITS 3.8.1 AC Sources - Operating

E

## Specification 3.8.3

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PBAPS

LIMITING CONDITIONS FOR OPERATION

A1

SURVEILLANCE REQUIREMENTS

A1 4.9.A.1 (Continued)

A1

2. Each of the required diesel generators shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in 4.9.A.1.2.1 by:

every 31 days

Verifying the fuel level in the fuel storage tank, and the volume of fuel onsite.

is > 31,000 gal

31,000

Condition B  
and  
SR 3.8.3.2

SR 3.8.3.1

2. Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day fuel tank.

3. Verifying that the diesel can start\* and gradually accelerate to synchronous speed with generator voltage and frequency at  $4160 \pm 410$  volts and  $60 \pm 1.2$  HZ.

4. Verifying that the diesel can be synchronized, gradually loaded\* to an indicated 2400-2600\* kw and can operate with this load for at least 60 minutes.

5. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

See Discussion of changes  
in ITS 3.8.1, "AC Source-  
Operating"

\*This test shall be conducted in accordance with the manufacturer's recommendations regarding engine pre-lube and warmup and, as applicable, loading and shutdown.

\*This load band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing, under direct monitoring by the manufacturer or system engineer, or momentary variations due to changing bus loads shall not invalidate the test.



LIMITING CONDITIONS FOR OPERATION

3.9.B (Continued)

6. With fuel oil in one of the diesel generator main storage tanks ~~not~~ available or not in conformance with Surveillance Requirement 4.9.A.1.2.e, implement the following:

a. Isolate the main storage tank from the system, with the associated diesel generator being supplied from one of the remaining storage tanks within 8 hours, and

Restore fuel oil total particulates within limits within 7 days

b. Establish and maintain a minimum of 108,000 gallons of diesel fuel oil in the other three main storage tanks within 12 hours, and

31,000 M2  
each  
48  
Condition A  
M2

c. Sample the fuel oil in the other three main storage tanks and confirm conformance with specification 4.9.A.1.2.e within 24 hours, and

R3

d. Replace the unacceptable fuel oil with acceptable fuel and return the storage tank to service within 7 days, or place the reactor in Cold Shutdown within 24 hours.

L2  
Condition F

L2  
R1  
M2  
For Condition C and within 48 hours for Condition A  
Release the associated DG inoperable immediately

Accelerated testing of the diesel generators is not required.

A1

7. None

Condition D L2

7. With one of the 4kV emergency busses or 480V emergency load centers required by 3.9.A.3 not energized, declare the associated equipment inoperable and take the appropriate action for the system.  
  
Reenergize the bus within 24 hours or be in COLD SHUTDOWN within the following 24 hours.

See Discussion of changes for ITS 3.8.7, "Dist. Sys-Operating"

8. With the Conowingo line inoperable for 15 days, notify the NRC.

8. Verify once/month the operability of the Conowingo line.

See Discussion of changes for ITS 3.8.1, "AC Sources-Operating"

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Condition B M3



DISCUSSION OF CHANGES  
ITS 3.8.3: DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

TECHNICAL CHANGES - MORE RESTRICTIVE

M<sub>1</sub> Existing Specification 3.9.A which governs the diesel generators (DGs) and associated support systems (fuel oil storage and transfer, lube oil, and starting air) requires that these systems must be Operable or "the reactor shall not be made critical." Proposed Specification 3.8.1, AC Sources—Operating, will require that the DGs be Operable at all times in Modes 1, 2, and 3 and proposed Specification 3.8.2, AC Sources—Shutdown, will require that the DGs be Operable at all times in Modes 4, 5, and whenever irradiated fuel is moved in the secondary containment. To support this increase in the Applicability of requirements for the DGs, proposed Specification 3.8.3, Diesel Fuel Oil, Lube Oil, and Starting Air, will require that DG support systems be Operable "when associated DG is required to be Operable." This change adds additional times and conditions when the DGs and support systems must be Operable and it constitutes a more restrictive change. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.

M<sub>2</sub> Existing Specification 3.9.A.2 establishes the requirements for the minimum cumulative onsite inventory of diesel fuel oil at > 108,000 gallons with > 28,000 gallons per Operable DG. Proposed Specification 3.8.1 will eliminate the requirement to maintain 108,000 gallons of fuel on site and will require > 31,000 gallons in the storage tank associated with each Operable DG. Proposed LCO 3.8.3 establishes 31,000 gallons of fuel oil as the minimum required fuel oil necessary to support 7 days operation at anticipated post accident loading and establishes 27,500 gallons of fuel oil as the minimum required to support 6 days of DG operation at anticipated post accident loading. With 4 tanks at 31,000 gallons, the anticipated cumulative post accident fuel consumption of 108,000 is satisfied with considerable margin. The increase of the minimum fuel oil inventory in each storage tank from 28,000 gallons to 31,000 gallons is intended to increase conservatism and to account for unusable oil in the tank. LCO 3.8.3 also establishes action requirements at 27,500 gallons of fuel oil which is a conservative value for the volume of fuel oil required to support six days of DG operation at the anticipated post accident loadings.

The requirement to maintain a minimum fuel oil volume in the storage tank associated with each Operable DG eliminates the option in Specification 3.9.B.6 that allows a DG to be considered Operable for 7 days when its fuel transfer pump is aligned to an adjacent storage tank. The reasons for these changes are discussed below.

NO SIGNIFICANT HAZARDS CONSIDERATIONS  
SECTION 3.8--ELECTRICAL POWER SYSTEMS

TECHNICAL CHANGES - MORE RESTRICTIVE (continued)  
(M<sub>1</sub>, M<sub>2</sub>, and M<sub>3</sub> Labeled Comments/Discussions for ITS 3.8.3)

M<sub>1</sub> Existing Specification 3.9.A which governs the diesel generators (DGs) and associated support systems (fuel oil storage and transfer, lube oil, and starting air) requires that these systems must be Operable or "the reactor shall not be made critical." Proposed Specification 3.8.1, AC Sources—Operating, will require that the DGs be Operable at all times in Modes 1, 2, and 3 and proposed Specification 3.8.2, AC Sources—Shutdown, will require that the DGs be Operable at all times in Modes 4, 5, and whenever irradiated fuel is moved in the secondary containment. To support this increase in the Applicability of requirements for the DGs, proposed Specification 3.8.3, Diesel Fuel Oil, Lube Oil, and Starting Air, will require that DG support systems be Operable "when associated DG is required to be Operable." This change adds additional times and conditions when the DGs and support systems must be Operable and it constitutes a more restrictive change. This change is consistent with the BWR Standard Technical Specifications, NUREG-1433.

M<sub>2</sub> Existing Specification 3.9.A.2 establishes the requirements for the minimum cumulative onsite inventory of diesel fuel oil at > 108,000 gallons with > 28,000 gallons per Operable DG. Proposed Specification 3.8.1 will eliminate the requirement to maintain 108,000 gallons of fuel on site and will require > 31,000 gallons in the storage tank associated with each Operable DG. Proposed LCO 3.8.3 establishes 31,000 gallons of fuel oil as the minimum required fuel oil necessary to support 7 days operation at anticipated post accident loading and establishes 27,500 gallons of fuel oil as the minimum required to support 6 days of DG operation at anticipated post accident loading. With 4 tanks at 31,000 gallons, the anticipated cumulative post accident fuel consumption of 108,000 is satisfied with considerable margin. The increase of the minimum fuel oil inventory in each storage tank from 28,000 gallons to 31,000 gallons is intended to increase conservatism and to account for unusable oil in the tank. LCO 3.8.3 also establishes action requirements at 27,500 gallons of fuel oil which is a conservative value for the volume of fuel oil required to support six days of DG operation at the anticipated post accident loadings.

The requirement to maintain a minimum fuel oil volume in the storage tank associated with each Operable DG eliminates the option in Specification 3.9.B.6 that allows a DG to be considered Operable for 7 days when its fuel transfer pump is aligned to an adjacent storage tank. The reasons for these changes are discussed below.