NMC
Committed to Nuclear Excellence

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Dockets 50-266 And 50-301
Point Beach Nuclear Plant, Units 1 and 2
Technical Specification Bases Revisions

Nuclear Management Company, LLC (NMC), licensee for the Point Beach Nuclear Plant (PBNP) Units 1 and 2, hereby submits a revision to the Technical Specifications (TS) Bases Table of Contents and the Bases for the following TSs: 3.0, "Surveillance Requirement (SR) Applicability," LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," LCO 3.4.1, "RCS Pressure, Temperature, and Flow DNB Limits," LCO 3.6.2, "Containment Air Locks," LCO 3.6.3, "Containment Isolation Valves," LCO 3.6.6, "Containment Spray and Cooling Systems, " LCO 3.6.7, "Spray Additive System," LCO 3.7.4, "ADV Flowpaths," and LCO 3.9.3, "Containment Penetrations." A description of the changes is provided in Attachment 1.

These changes have been screened for evaluation pursuant to the requirements of 10 CFR 50.59 in accordance with approved PBNP procedures and were determined to be acceptable.

Attachment 2 provides clean copies of the affected TS Bases pages indicating the changes.

If there are questions on this matter, please contact Roger Scott, of my staff, at (920) 755-7255.

Sincerely,

for A. J. Cayia
Site Vice President

RDS/rds

Attachments: 1 - Description of Changes
2 - Revised Technical Specification Bases Pages

cc: NRC Regional Administrator
NRC Resident Inspector
NRC Project Manager
PSCW

A001

ATTACHMENT 1

To

NRC 2002-0108

Technical Specification Bases Revisions

Description of Changes

1.0 INTRODUCTION

Nuclear Management Company, LLC (NMC), licensee for the Point Beach Nuclear Plant (PBNP) Units 1 and 2, hereby submits a revision to the Technical Specifications (TS) Bases Table of Contents and the Bases for the following TSs:

- TS 3.0, "Surveillance Requirement (SR) Applicability"
- LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation"
- LCO 3.4.1, "RCS Pressure, Temperature, and Flow DNB Limits"
- LCO 3.6.2, "Containment Air Locks," LCO 3.6.3, "Containment Isolation Valves"
- LCO 3.6.6, "Containment Spray and Cooling Systems"
- LCO 3.6.7, "Spray Additive System"
- LCO 3.7.4, "ADV Flowpaths"
- LCO 3.9.3, "Containment Penetrations"

2.0 DESCRIPTION OF CHANGES

B 3.0, "Surveillance Requirement (SR) Applicability"

The Bases for TS 3.0 was revised by adding a statement to SR 3.0.1 whereby surveillances may be performed by means of any series of sequential, overlapping, or total steps, provided the surveillance is performed within the specified Frequency. This revision incorporates approved TSTF-434, Revision 0, in its entirety.

Bases Table of Contents and B 3.7.4, "ADV Flowpaths"

The Bases Table of Contents and the Bases for TS 3.7.4 were revised to correct clerical errors. The section titles listed in the Table of Contents for B 3.2.1, B 3.3.4, B 3.7.2, B 3.7.7, and B 3.7.12 were inconsistent with the titles of the associated Bases sections. Additionally, the title of Bases 3.7.4 was inconsistent with the title of LCO 3.7.4.

B 3.3.3, "Post Accident Monitoring (PAM) Instrumentation"

The Bases for TS 3.3.3 was revised by adding a reference to NRC SER Letter, "Point Beach Nuclear Power Plants, Units 1 and 2 – Emergency Response Capability – Conformance to Regulatory Guide 1.9.7, Revision 2," February 22, 2002.

B 3.4.1, "RCS Pressure, Temperature, and Flow DNB Limits"

The Bases for TS 3.4.1 was revised to correct clerical errors. The Bases were inconsistent with the Standard Technical Specifications (NUREG-1431) and License Amendments approved by the NRC. NRC SER Letter dated August 8, 2001, approved the conversion of the TSs to Improved Technical Specifications (ITS). The verbiage of B 3.4.1 was inadvertently changed during the conversion to ITS by a supplemental change to incorporate approved TSTF-339. However, the "clean" copy of the ITS contained the error and was carried through to the final version of the ITS. Therefore, the clerical error was an oversight and was corrected to reflect the statement in NUREG-1431, as updated by TSTF-339.

B 3.6.2, "Containment Air Locks"

The Bases for TS 3.6.2 was revised to provide terminology consistent with the associated TS. The term "door" was replaced with "bulkhead," when intended to describe equipment required to be operable. The term "door" was replaced with "bulkhead door," when intended to describe the access to the air lock.

B 3.6.3, "Containment Isolation Valves"

The Bases for TS 3.6.3 was revised by deleting "through a system walkdown" from the discussion of the requirements to verify the alignment or isolation of a system. This revision incorporates approved TSTF-440, Revision 0, in its entirety.

B 3.6.6, "Containment Spray and Cooling Systems"

The Bases for TS 3.6.6 was revised by deleting "through a system walkdown" from the discussion of the requirements to verify the alignment or isolation of a system. This revision incorporates approved TSTF-440, Revision 0, in its entirety.

B 3.6.7, "Spray Additive System"

The Bases for TS 3.6.7 was revised by deleting "through a system walkdown" from the discussion of the requirements to verify the alignment or isolation of a system. This revision incorporates approved TSTF-440, Revision 0, in its entirety.

B 3.9.3, "Containment Penetrations"

The Bases for TS 3.9.3 was revised from ". . .and the minimum decay time of 161 hours prior to CORE ALTERATION ensure that the release of fission product radioactivity subsequent to a fuel handling accident, results in doses well within the guidelines specified in 10 CFR 100" to ". . .and the minimum decay time of 161 hours prior to movement of irradiated fuel ensure that the release of fission product radioactivity subsequent to a fuel handling accident, results in doses well within the guidelines specified in 10 CFR 100." This revision will make the statement in the Bases consistent with the assumptions in FSAR 14.2.1, Fuel Handling Accident.

ATTACHMENT 2

To

NRC 2002-0108

Technical Specification Bases Revisions

Affected TS Bases:

i through iii
B 3.0-10 through B 3.0-12
B 3.3.3-2, B 3.3.3-3, B 3.3.3-7, and B 3.3.3-14
B 3.4.1-2
B 3.6.2-3 through B 3.6.2-7
B 3.6.3-4 and B 3.6.3-7
B 3.6.6-7
B 3.6.7-3
B 3.7.4-1
B 3.9.3-2

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B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

BASES

SRs

SR 3.0.1 through SR 3.0.4 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.

SR 3.0.1

SR 3.0.1 establishes the requirement that SRs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This Specification is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency, in accordance with SR 3.0.2, constitutes a failure to meet an LCO. Surveillances may be performed by means of any series of sequential, overlapping, or total steps, provided the entire Surveillance is performed within the specified Frequency. Additionally, the definitions related to instrument testing (e.g., CHANNEL CALIBRATION) specify that these tests are performed by means of sequential, overlapping, or total steps.

Systems and components are assumed to be OPERABLE when the associated SRs have been met. However, nothing in this Specification is to be construed as implying that systems or components are OPERABLE when:

a. The systems or components are known to be inoperable, although still meeting the SRs; or

b. The requirements (acceptance criteria) of the Surveillance(s) are known not to be met between required Surveillance performances.

Surveillances do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified. The SRs associated with a test exception are only applicable when the test exception is used as an allowable exception to the requirements of a Specification.

Unplanned events may satisfy the requirements (including applicable acceptance criteria) for a given SR. In this case, the unplanned event may be credited as fulfilling the performance of the SR. This allowance includes those SRs whose performance is normally precluded in a given MODE or other specified condition.

Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on inoperable equipment because the

BASES

SR 3.0.1 (continued) ACTIONS define the remedial measures that apply.

Surveillances have to be met and performed in accordance with SR 3.0.2, prior to returning equipment to OPERABLE status.

Upon completion of maintenance, appropriate post maintenance testing is required to declare equipment OPERABLE. This includes ensuring applicable Surveillances are not failed and their most recent performance is in accordance with SR 3.0.2. Post maintenance testing may not be possible in the current MODE or other specified conditions in the Applicability due to the necessary unit parameters not having been established. In these situations, the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a MODE or other specified condition where other necessary post maintenance tests can be completed.

SR 3.0.2 SR 3.0.2 establishes the requirements for meeting the specified Frequency for Surveillances and any Required Action with a Completion Time that requires the periodic performance of the Required Action on a "once per ..." interval.

SR 3.0.2 permits a 25% extension of the interval specified in the Frequency. This extension facilitates Surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the Surveillance (e.g., transient conditions or other ongoing Surveillance or maintenance activities).

The 25% extension does not significantly degrade the reliability that results from performing the Surveillance at its specified Frequency. This is based on the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the SRs. The exceptions to SR 3.0.2 are those Surveillances for which the 25% extension of the interval specified in the Frequency does not apply. These exceptions are stated in the individual Specifications. An example of where SR 3.0.2 does not apply is the Containment Leakage Rate Testing Program.

As stated in SR 3.0.2, the 25% extension also does not apply to the initial portion of a periodic Completion Time that requires performance on a "once per ..." basis. The 25% extension applies to each performance after the initial performance. The initial performance of the Required Action, whether it is a particular Surveillance or some other remedial action, is considered a single action with a single Completion Time. One reason for not allowing the 25% extension to this

BASES

SR 3.0.2 (continued) Completion Time is that such an action usually verifies that no loss of function has occurred by checking the status of redundant or diverse components or accomplishes the function of the inoperable equipment in an alternative manner.

The provisions of SR 3.0.2 are not intended to be used repeatedly merely as an operational convenience to extend Surveillance intervals (other than those consistent with refueling intervals) or periodic Completion Time intervals beyond those specified.

SR 3.0.3

SR 3.0.3 establishes the flexibility to defer declaring affected equipment inoperable or an affected variable outside the specified limits when a Surveillance has not been completed within the specified Frequency. A delay period of up to 24 hours or up to the limit of the specified Frequency, whichever is greater, applies from the point in time that it is discovered that the Surveillance has not been performed in accordance with SR 3.0.2, and not at the time that the specified Frequency was not met.

This delay period provides adequate time to complete Surveillances that have been missed. This delay period permits the completion of a Surveillance before complying with Required Actions or other remedial measures that might preclude completion of the Surveillance.

The basis for this delay period includes consideration of unit conditions, adequate planning, availability of personnel, the time required to perform the Surveillance, the safety significance of the delay in completing the required Surveillance, and the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the requirements.

When a Surveillance with a Frequency based not on time intervals, but upon specified unit conditions, operating situations, or requirements of regulations (e.g., prior to entering MODE 1 after each fuel loading, or in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions, etc.) is discovered to not have been performed when specified, SR 3.0.3 allows for the full delay period of up to the specified Frequency to perform the Surveillance. However, since there is not a time interval specified, the missed Surveillance should be performed at the first reasonable opportunity.

SR 3.0.3 provides a time limit for, and allowances for the performance of, Surveillances that become applicable as a consequence of MODE changes imposed by Required Actions.

BASES

BACKGROUND (continued)

- Provide information regarding the release of radioactive materials to allow for early indication of the need to initiate action necessary to protect the public, and to estimate the magnitude of any impending threat.

These key variables are identified by the Regulatory Guide 1.97 analyses (Refs. 1 and 4). These analyses identify the unit specific Type A and Category I variables and provide justification for deviating from the NRC proposed list of Category I variables.

The specific instrument Functions listed in Table 3.3.3-1 are discussed in the LCO section.

APPLICABLE SAFETY ANALYSES

The PAM instrumentation ensures the operability of Regulatory Guide 1.97 Type A and Category I variables so that the control room operating staff can:

- Perform the diagnosis specified in the emergency operating procedures (these variables are restricted to preplanned actions for the primary success path of DBAs), e.g., loss of coolant accident (LOCA);
- Take the specified, pre-planned, manually controlled actions, for which no automatic control is provided, and that are required for safety systems to accomplish their safety function;
- Determine whether systems important to safety are performing their intended functions;
- Determine the likelihood of a gross breach of the barriers to radioactivity release;
- Determine if a gross breach of a barrier has occurred; and
- Initiate action necessary to protect the public and to estimate the magnitude of any impending threat.

PAM instrumentation that meets the definition of Type A in Regulatory Guide 1.97 satisfies Criterion 3 of the NRC Policy Statement. Category I, non-Type A, instrumentation must be retained in TS because it is intended to assist operators in minimizing the consequences of accidents. Therefore, Category I, non-Type A, variables are important for reducing public risk.

BASES

LCO

The PAM instrumentation LCO provides OPERABILITY requirements for Regulatory Guide 1.97 Type A monitors, which provide information required by the control room operators to perform certain manual actions specified in the unit Emergency Operating Procedures. These manual actions ensure that a system can accomplish its safety function, and are credited in the safety analyses. Additionally, this LCO addresses Regulatory Guide 1.97 instruments that have been designated Category I, non-Type A.

The OPERABILITY of the PAM instrumentation ensures there is sufficient information available on selected unit parameters to monitor and assess unit status following an accident. This capability is consistent with the recommendations of Reference 2.

LCO 3.3.3 requires two OPERABLE channels for most Functions. Two OPERABLE channels ensure no single failure prevents operators from getting the information necessary for them to determine the safety status of the unit, and to bring the unit to and maintain it in a safe condition following an accident.

Furthermore, OPERABILITY of two channels allows a CHANNEL CHECK during the post accident phase to confirm the validity of displayed information.

One exception to the two channel requirement is Containment Isolation Valve (CIV) Position. In this case, the important information is the status of the containment penetrations. The LCO requires one position indicator for each active CIV. This is sufficient to redundantly verify the isolation status of each isolable penetration either via indicated status of the active valve and prior knowledge of a passive valve, or via system boundary status. If a normally active CIV is known to be closed and deactivated, position indication is not needed to determine status. Therefore, the position indication for valves in this state is not required to be OPERABLE.

Another exception to the two channel requirement is AFW flow, because it is a backup indication to Steam Generator Water Level (Narrow Range).

Table 3.3.3-1 provides a list of variables identified by the Regulatory Guide 1.97 (Refs. 1 and 4) analyses. Table 3.3.3-1 lists all Type A and Category I variables identified by the Regulatory Guide 1.97 analyses, as amended by the NRC's SERs.

BASES

LCO (continued)

12. Containment Isolation Valve Position

CIV Position is provided for verification of Containment OPERABILITY, and Containment isolation (Ref. 4).

When used to verify Containment isolation, the important information is the isolation status of the containment penetrations. The LCO requires one channel of valve position indication in the control room to be OPERABLE for each active CIV in a containment penetration flow path, i.e., two total channels of CIV position indication for a penetration flow path with two active valves. For containment penetrations with only one active CIV having control room indication, Note (b) requires a single channel of valve position indication to be OPERABLE. This is sufficient to redundantly verify the isolation status of each isolable penetration either via indicated status of the active valve, as applicable, and prior knowledge of a passive valve, or via system boundary status. If a normally active CIV is known to be closed and deactivated, position indication is not needed to determine status. Therefore, the position indication for valves in this state is not required to be OPERABLE. Note (a) to the Required Channels states that the Function is not required for isolation valves whose associated penetration is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

13. Containment Area Radiation (High Range)

Containment Area Radiation is provided to monitor for the potential of significant radiation releases and to provide release assessment for use by operators in determining the need to invoke site emergency plans. Containment radiation level is used to determine if a high energy line break (HELB) has occurred, and whether the event is inside or outside of containment.

14. Hydrogen Monitors

Hydrogen Monitors are provided to detect high hydrogen concentration conditions that represent a potential for containment breach from a hydrogen explosion. This variable is also important in verifying the adequacy of mitigating actions.

There are a total of four hydrogen monitors, two powered from the white instrument bus and two powered from the yellow instrument bus. The LCO requires two hydrogen monitors to be OPERABLE, powered from independent power supplies. Therefore, one hydrogen monitor powered from the white instrument bus and one

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.3.3

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter with the necessary range and accuracy. This SR is modified by a Note that specifies the CHANNEL CALIBRATION of the Containment Area Radiation (High Range) detectors shall consist of a verification of a response to a source. Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION of the Core Exit thermocouple sensors is accomplished by an inplace cross calibration that compares the other sensing elements with the recently installed sensing element. The Frequency is based on operating experience and consistency with the typical industry refueling cycle.

SR 3.3.3.4

SR 3.3.3.4 is the performance of a TADOT of Containment Isolation Valve Position Indication. This TADOT is performed every 18 months. The test shall independently verify the OPERABILITY of containment isolation valve position indication against the actual position of the valves.

The Frequency is based on the known reliability of the Functions and has been shown to be acceptable through operating experience.

REFERENCES

1. NRC SER Letter, "Conformance to Regulatory Guide 1.97 for the Point Beach Nuclear Plant Units 1 and 2," July 11, 1986.
2. Regulatory Guide 1.97, Revision 2, December 1980.
3. NUREG-0737, Supplement 1, "TMI Action Items."
4. NRC SER Letter, "Point Beach Nuclear Power Plant, Units 1 and 2 – Emergency Response Capability – Conformance to Regulatory Guide 1.97, Revision 2", February 22, 2002.

BASES

APPLICABLE SAFETY ANALYSES (continued)

acceptance limit for the RCS DNB parameters. Changes to the unit that could impact these parameters must be assessed for their impact on the DNBR criteria. The transients analyzed for include loss of coolant flow events and dropped or stuck rod events. A key assumption for the analysis of these events is that the core power distribution is within the limits of LCO 3.1.6, "Control Bank Insertion Limits"; LCO 3.2.3, "AXIAL FLUX DIFFERENCE (AFD)"; and LCO 3.2.4, "QUADRANT POWER TILT RATIO (QPTR) ."

The pressurizer pressure limit and the RCS average temperature limit specified in the COLR correspond to the analytical limits used in the safety analyses, with allowance for measurement uncertainty.

The RCS DNB parameters satisfy Criterion 2 of the NRC Policy Statement.

LCO

This LCO specifies limits on the monitored process variables - pressurizer pressure, RCS average temperature, and RCS total flow rate - to ensure the core operates within the limits assumed in the safety analyses. These variables are contained in the COLR to provide operating and analysis flexibility from cycle to cycle. However, the minimum RCS flow, usually based on maximum analyzed steam generator tube plugging, is retained in the TS LCO. Operating within these limits will result in meeting the DNBR criterion in the event of a DNB limited transient.

RCS total flow rate contains a measurement error based on performing a precision heat balance and using the result to calibrate the RCS flow rate indicators.

The numerical values for pressure, temperature, and flow rate specified in the COLR are given for the measurement location and have been adjusted for instrument error.

APPLICABILITY

In MODE 1, the limits on pressurizer pressure, RCS coolant average temperature, and RCS flow rate must be maintained during steady state operation in order to ensure DNBR criteria will be met in the event of an unplanned loss of forced coolant flow or other DNB limited transient. In all other MODES, the power level is low enough that DNB is not a concern.

A Note has been added to indicate the limit on pressurizer pressure is not applicable during short term operational transients such as a THERMAL POWER ramp increase > 5% RTP per minute or a

BASES

ACTIONS

The ACTIONS are modified by a Note that allows entry and exit to perform repairs on the affected air lock component. If the outer bulkhead is inoperable, then it may be easily accessed for most repairs. It is preferred that the air lock be accessed from inside primary containment by entering through the other OPERABLE air lock. However, if this is not practicable, or if repairs on either bulkhead must be performed from the barrel side of the bulkhead, then it is permissible to enter the air lock through the OPERABLE bulkhead door, which means there is a short time during which the containment boundary is not intact (during access through the OPERABLE bulkhead door). The ability to open the OPERABLE bulkhead door, even if it means the containment boundary is temporarily not intact, is acceptable due to the low probability of an event that could pressurize the containment during the short time in which the OPERABLE bulkhead door is expected to be open. After each entry and exit, the OPERABLE bulkhead door must be immediately closed, but is not required to be locked while repairs are actively being performed on the inoperable bulkhead. If ALARA conditions permit, entry and exit should be via an OPERABLE air lock.

A second Note has been added to provide clarification that, for this LCO, separate Condition entry is allowed for each air lock. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable air lock. Complying with the Required Actions may allow for continued operation, and a subsequent inoperable air lock is governed by subsequent Condition entry and application of associated Required Actions.

In the event the air lock leakage results in exceeding the overall containment leakage rate, Note 3 directs entry into the applicable Conditions and Required Actions of LCO 3.6.1, "Containment."

A.1, A.2, and A.3

With one air lock bulkhead in one or more containment air locks inoperable, the door and its associated equalization valve in the OPERABLE bulkhead must be verified closed (Required Action A.1) in each affected containment air lock. This ensures that a leak tight containment barrier is maintained by the use of an OPERABLE bulkhead. This action must be completed within 1 hour. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires containment be restored to OPERABLE status within 1 hour.

In addition, the affected air lock penetration must be isolated by locking closed the bulkhead door and equalization valve on the OPERABLE

BASES

ACTIONS (continued) bulkhead within the 24 hour Completion Time. The 24 hour Completion Time is reasonable for locking the bulkhead door and equalization valve on the OPERABLE bulkhead, considering the bulkhead door and equalization valve on the OPERABLE bulkhead of the affected air lock is being maintained closed.

Required Action A.3 verifies that an air lock with an inoperable bulkhead has been isolated by the use of a locked and closed bulkhead door and equalization valve on the OPERABLE bulkhead. This ensures that an acceptable containment leakage boundary is maintained. The Completion Time of once per 31 days is based on engineering judgment and is considered adequate in view of the low likelihood of a locked door or equalization valve being mispositioned and other administrative controls. Required Action A.3 is modified by a Note that applies to air lock doors and equalization valves located in high radiation areas and allows these doors and valves to be verified locked closed 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 the door or equalization valve, once it has been verified to be in the proper position, is small.

The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both bulkheads in the same air lock are inoperable. With both bulkheads in the same air lock inoperable, an OPERABLE isolation boundary is not available. Required Actions C.1 and C.2 are the appropriate remedial actions. The exception of Note 1 does not affect tracking the Completion Time from the initial entry into Condition A; only the requirement to comply with the Required Actions. Note 2 allows use of the air lock for entry and exit for 7 days under administrative controls if both air locks have an inoperable bulkhead. This 7 day restriction begins when the second air lock is discovered inoperable. Containment entry may be required on a periodic basis to perform Technical Specifications (TS) Surveillances and Required Actions, as well as other activities on equipment inside containment that are required by TS or activities on equipment that support TS-required equipment. This Note is not intended to preclude performing other activities (i.e., non-TS-required activities) if the containment is entered, using the inoperable air lock, to perform an allowed activity listed above. This allowance is acceptable due to the low probability of an event that could pressurize the containment during the short time that the OPERABLE bulkhead door is expected to be open.

BASES

ACTIONS (continued) B.1, B.2, and B.3

With an air lock interlock mechanism inoperable in one or more air locks, the Required Actions and associated Completion Times are consistent with those specified in Condition A. The Required Actions have been modified by two Notes. Note 1 ensures that only the Required Actions and associated Completion Times of Condition C are required if both bulkheads in the same air lock are inoperable. With both bulkheads in the same air lock inoperable, an OPERABLE isolation boundary is not available. Required Actions C.1 and C.2 are the appropriate remedial actions. Note 2 allows entry into and exit from containment under the control of a dedicated individual stationed at the air lock to ensure that only one bulkhead door and its associated equalization valve is opened at a time (i.e., the individual performs the function of the interlock).

Required Action B.3 is modified by a Note that applies to air lock doors and equalization valves located in high radiation areas and allows these doors and valves to be verified locked closed 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 the door or equalization valve, once it has been verified to be in the proper position, is small.

C.1, C.2, and C.3

With one or more air locks inoperable for reasons other than those described in Condition A or B, Required Action C.1 requires action to be initiated immediately to evaluate previous combined leakage rates using current air lock test results. An evaluation is acceptable, since it is overly conservative to immediately declare the containment inoperable if both bulkheads in an air lock are inoperable. In many instances (e.g., only one seal per door has failed), containment remains OPERABLE, yet only 1 hour (per LCO 3.6.1) would be provided to restore the air lock bulkhead to OPERABLE status prior to requiring a plant shutdown. In addition, even with both doors failing the seal test, the overall containment leakage rate can still be within limits.

Required Action C.2 requires that one door and its associated equalization valve in the affected containment air lock must be verified to be closed within the 1 hour Completion Time. This specified time period is consistent with the ACTIONS of LCO 3.6.1, which requires that containment be restored to OPERABLE status within 1 hour.

Additionally, the affected air lock(s) must be restored to OPERABLE status within the 36 hour Completion Time. The specified time period is

BASES

ACTIONS (continued) considered reasonable for restoring an inoperable air lock to OPERABLE status, assuming that at least one door and its associated equalization valve are maintained closed in each affected air lock.

D.1 and D.2

If the inoperable containment air lock cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.2.1

Maintaining containment air locks OPERABLE requires compliance with the leakage rate test requirements of the Containment Leakage Rate Testing Program. This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The acceptance criteria specified in the Containment Leakage Rate Testing Program for the air locks, limits airlock leakage to a small percentage of the combined Type B and C leakage limit.

The Frequency is required by the Containment Leakage Rate Testing Program.

The SR has been modified by two Notes. Note 1 states that an inoperable air lock bulkhead does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock bulkhead is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR requiring the results to be evaluated against the acceptance criteria which is applicable to SR 3.6.1.1. This ensures that air lock leakage is properly accounted for in determining the combined Type B and C containment leakage rate.

SR 3.6.2.2

The bulkhead doors and equalization valves are interlocked with each other to prevent simultaneous opening of the doors and or equalizing valves in the redundant bulkheads. Since both the inner and outer bulkheads of an air lock are designed to withstand the maximum expected post accident containment pressure, OPERABILITY of either

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SURVEILLANCE REQUIREMENTS (continued)

bulkhead will support containment OPERABILITY. Thus, the airlock interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit in and out of the containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors and or equalizing valves in redundant bulkheads will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is not normally challenged when the containment air lock door is used for entry and exit (procedures require strict adherence to single door opening), this test is only required to be performed every 24 months. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of containment OPERABILITY if the Surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience. The Frequency is based on engineering judgment and is considered adequate given that the interlock is not challenged during the use of the airlock.

REFERENCES

1. 10 CFR 50, Appendix J, Option B.

2. FSAR, Section 5.5.

BASES

ACTIONS (continued) The ACTIONS are further modified by a third Note, which ensures appropriate remedial actions are taken, if necessary, if the affected systems are rendered inoperable by an inoperable containment isolation valve.

In the event the containment isolation valve leakage results in exceeding the overall containment leakage rate, Note 4 directs entry into the applicable Conditions and Required Actions of LCO 3.6.1.

A.1 and A.2

In the event one containment isolation valve in one or more penetration flow paths is inoperable, the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic containment isolation valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For a penetration flow path isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest available one to containment. Required Action A.1 must be completed within 4 hours. The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4.

For affected penetration flow paths that cannot be restored to OPERABLE status within the 4 hour Completion Time and that have been isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and no longer capable of being automatically isolated will be in the isolation position should an event occur. This Required Action does not require any testing or device manipulation. Rather, it involves verification that those isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days for isolation devices outside containment" is appropriate considering the fact that the devices are operated under administrative controls and the probability of their misalignment is low.

For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and

BASES

ACTIONS (continued) D.1 and D.2

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1

Each containment purge supply and exhaust valve is required to be verified closed with their control board switches locked at 31 day intervals. This Surveillance is designed to ensure that a gross breach of containment is not caused by an inadvertent or spurious opening of a containment purge valve. Detailed analysis of the purge valves failed to conclusively demonstrate their ability to close under LOCA conditions. Therefore, these valves are required to be in the closed position with their control switches locked during MODES 1, 2, 3, and 4. The Frequency is a result of an NRC initiative, Generic Issue B-24 (Ref. 3), related to containment purge valve use during plant operations. In the event of purge valve leakage in excess of that allowed by the Containment Leakage Rate Testing Program, the Surveillance permits opening one purge valve in a penetration flow path to perform repairs.

SR 3.6.3.2

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open. This SR does not

BASES

ACTIONS (continued) period.

The 144 hour portion of the Completion Time for Required Action C.1 is based upon engineering judgment. It takes into account the low probability of coincident entry into two Conditions in this Specification coupled with the low probability of an accident occurring during this time. Refer to Section 1.3 for a more detailed discussion of the purpose of the "from discovery of failure to meet the LCO" portion of the Completion Time.

D.1

With one containment cooler service water outlet valve inoperable, the containment cooling water outlet valve must be restored to OPERABLE status within 72 hours. During this period, the remaining containment cooler service water outlet valve is capable of providing 100% of assumed cooling water flow to all four containment accident fan coolers. The 72 hour Completion Time was developed taking into account the auto open and flow capability afforded by the redundant cooling water outlet valve, and the low probability of DBA occurring during this period.

E.1 and E.2

If the Required Action and associated Completion Time of Condition C or D of this LCO are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.6.1

Verifying the correct alignment for manual, power operated, and automatic valves in the containment spray flow path provides assurance that the proper flow paths will exist for Containment Spray System operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification that those valves outside containment (only check valves are inside containment) and capable of potentially being mispositioned are in the correct position.

BASES

ACTIONS (continued) 7.0 and 9.0. The 72 hour Completion Time takes into account the redundant NaOH delivery capability and the low probability of a DBA occurring during this period.

B.1

If the Spray Additive System is inoperable for any reason other than Condition A, at least one flowpath must be restored to OPERABLE status within 1 hour. The Completion Time of 1 hour reflects the loss of the capability to add NaOH to the containment sump during an accident and the importance of restoring the system to an OPERABLE status.

C.1 and C.2

If the Required Action and Completion Time of Condition A or B are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 84 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE 5 allows 48 hours for restoration of the Spray Additive System in MODE 3 and 36 hours to reach MODE 5. This is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

SR 3.6.7.1

Verifying the correct alignment of Spray Additive System manual, power operated, and automatic valves in the spray additive flow path provides assurance that the system is able to provide additive to the Containment Spray System in the event of a DBA. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification that those valves outside containment and capable of potentially being mispositioned are in the correct position.

SR 3.6.7.2

To provide effective iodine removal, the containment spray must be an alkaline solution. Since the RWST contents are normally acidic, the volume of the spray additive tank must provide a sufficient volume of

B 3.7 PLANT SYSTEMS

B 3.7.4 Atmospheric Dump Valves (ADVs) Flowpaths

BASES

BACKGROUND

The ADVs provide a method for cooling the unit to residual heat removal (RHR) entry conditions should the preferred heat sink via the Steam Bypass System to the condenser not be available, as discussed in the FSAR, Section 10.1 (Ref. 1). This is done in conjunction with the Auxiliary Feedwater System providing cooling water from the condensate storage tank (CST) or the service water system. The ADVs may also be required to meet the design cooldown rate during a normal cooldown when steam pressure drops too low for maintenance of a vacuum in the condenser to permit use of the Steam Dump System.

One ADV flowpath for each of the two steam generators is provided. Each ADV flowpath consists of one ADV and an associated block valve.

The ADVs are provided with upstream block valves to permit their being tested at power, and to provide an alternate means of isolation. The ADVs are equipped with pneumatic controllers to permit control of the cooldown rate.

A description of the ADVs is found in Reference 1. The ADVs are OPERABLE when the ADVs are capable of being locally opened and closed.

APPLICABLE SAFETY ANALYSES

The design basis of the ADVs is established by the capability to cool the unit to RHR entry conditions. The design rate of approximately 50°F per hour is applicable for one steam generator. This rate is adequate to cool the unit to RHR entry conditions with only one steam generator and one ADV, utilizing the cooling water supply available in the CST or the service water system.

In the accident analysis presented in Reference 2, the ADVs are assumed to be used by the operator to cool down the unit to RHR entry conditions for accidents accompanied by a loss of offsite power. Prior to operator actions to cool down the unit, the main steam safety valves (MSSVs) are assumed to operate automatically to relieve steam and maintain the steam generator pressure below the design value. For the recovery from a steam generator tube rupture (SGTR) event, the operator is required to perform a limited cooldown to establish adequate subcooling as a necessary step to terminate the primary to secondary break flow into the ruptured steam generator. The time required to terminate the primary to secondary break flow for an SGTR is more

BASES

BACKGROUND (continued)

The requirements for containment purge and exhaust system penetration closure ensure that a release of fission product radioactivity within containment will be restricted to within regulatory limits.

The Containment Purge and Exhaust System includes a 36 inch purge penetration and a 36 inch exhaust penetration. During MODES 1, 2, 3, and 4, the two valves in each of the purge and exhaust penetrations are secured in the closed position. The Containment Purge and Exhaust System is not subject to a Specification in MODE 5.

In MODE 6, large air exchanges are necessary to conduct refueling operations. The 36 inch purge system is used for this purpose, and all four valves are closed by the Containment Purge and Exhaust Isolation Instrumentation.

APPLICABLE SAFETY ANALYSES

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel (Ref. 1). Fuel handling accidents, analyzed in Reference 2, include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The requirements of LCO 3.9.6, "Refueling Cavity Water Level," and the minimum decay time of 161 hours prior to movement of irradiated fuel ensure that the release of fission product radioactivity subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100. Standard Review Plan, Section 15.7.4, Rev. 1 (Ref. 2), defines "well within" 10 CFR 100 to be 25% or less of the 10 CFR 100 values. The acceptance limits for offsite radiation exposure will be 25% of 10 CFR 100 values or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits).

Containment penetrations satisfy Criterion 3 of the NRC Policy Statement.

LCO

This LCO limits the consequences of a fuel handling accident in containment by limiting the potential escape paths for fission product radioactivity released within containment. The LCO requires any Containment Purge and Exhaust System penetration to be closed except for the OPERABLE containment purge and exhaust penetrations. For the OPERABLE containment purge and exhaust penetrations, this LCO ensures that these penetrations are isolable by the Containment Purge and Exhaust Isolation System. The