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NINE MILE POINT
NUCLEAR STATION

March 30, 2011

U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit No. 2, Docket No. 50-410

License Amendment Request Pursuant to 10 CFR 50.90: Request for Adoption of Technical Specification Task Force Traveler TSTF-514, Revision 3, "Revise BWR Operability Requirements and Actions for RCS Leakage Instrumentation"

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC (NMPNS) hereby requests an amendment to the Nine Mile Point Unit 2 (NMP2) Renewed Facility Operating License NPF-69.

The proposed amendment would revise Technical Specification (TS) Section 3.4.7, "RCS Leakage Detection Instrumentation," to define a new time limit for restoring inoperable Reactor Coolant System (RCS) leakage detection instrumentation to operable status and establish alternate methods of monitoring RCS leakage when required monitors are inoperable. TS Bases changes which reflect the proposed changes and more accurately reflect the contents of the facility design basis related to operability of the RCS leakage detection instrumentation are provided for information only. These changes are consistent with NRC-approved Revision 3 to Technical Specification Task Force (TSTF) Improved Standard Technical Specification (STS) Change Traveler TSTF-514, "Revise BWR Operability Requirements and Actions for RCS Leakage Instrumentation." The availability of this TS improvement was announced in the *Federal Register* on December 17, 2010 (75 FR 79048) as part of the consolidated line item improvement process (CLIIP).

The Enclosure provides an evaluation of the proposed changes and a marked-up copy of the existing TS and TS Bases pages to show the proposed changes. NMPNS has concluded that the activities associated

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with the proposed amendment represent no significant hazards consideration under the standards set forth in 10 CFR 50.92. There are no regulatory commitments identified in this submittal.

Approval of the proposed license amendment is requested by March 29, 2012, with implementation within 90 days of receipt of the approved amendment.

Pursuant to 10 CFR 50.91(b)(1), NMPNS has provided a copy of this license amendment request, with Enclosure, to the appropriate state representative.

Should you have any questions regarding the information in this submittal, please contact John J. Dosa, Director Licensing, at (315) 349-5219.

Very truly yours,

STATE OF NEW YORK :
: **TO WIT:**
COUNTY OF OSWEGO :

I, Sam Belcher, being duly sworn, state that I am Vice President-Nine Mile Point, and that I am duly authorized to execute and file this license amendment request on behalf of Nine Mile Point Nuclear Station, LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Nine Mile Point employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 30 day of March, 2011.

WITNESS my Hand and Notarial Seal:

Lisa M. Doran
Notary Public

My Commission Expires:

9/12/2013
Date

Lisa M. Doran
Notary Public in the State of New York
Oswego County Reg. No. 01DO6029220
My Commission Expires 9/12/2013

SB/JMT

Enclosure: Evaluation of the Proposed Change

cc: Regional Administrator, Region I, NRC
Project Manager, NRC
Resident Inspector, NRC
A. L. Peterson, NYSERDA

ENCLOSURE

EVALUATION OF THE PROPOSED CHANGE

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2. Proposed Technical Specification Bases Changes (Mark-up)

ENCLOSURE
EVALUATION OF THE PROPOSED CHANGE

1.0 DESCRIPTION

The proposed amendment would revise Nine Mile Point Unit 2 (NMP2) Technical Specification (TS) Section 3.4.7, "RCS Leakage Detection Instrumentation," to define a new time limit for restoring inoperable Reactor Coolant System (RCS) leakage detection instrumentation to operable status and establish alternate methods of monitoring RCS leakage when required monitors are inoperable. TS Bases changes which reflect the proposed TS changes are also provided. These changes are consistent with NRC-approved Revision 3 to Technical Specification Task Force (TSTF) Improved Standard Technical Specification (STS) Change Traveler TSTF-514, "Revise BWR Operability Requirements and Actions for RCS Leakage Instrumentation." The availability of this TS improvement was announced in the *Federal Register* on December 17, 2010 (75 FR 79048) as part of the consolidated line item improvement process (CLIIP).

2.0 PROPOSED CHANGES

The proposed changes revise and add a new Condition C to TS 3.4.7, "RCS Leakage Detection Instrumentation." New Condition C is applicable when the drywell atmospheric gaseous radioactivity monitor is the only operable TS-required instrument monitoring RCS leakage; i.e., TS-required drywell atmospheric particulate and drywell floor drain tank fill rate monitors are inoperable. New Condition C Required Actions require monitoring RCS leakage by obtaining and analyzing grab samples of the drywell atmosphere every 12 hours; monitoring RCS leakage using administrative means every 12 hours; and taking action to restore monitoring capability using the drywell floor drain tank fill rate monitoring system within 7 days.

Additionally, the Bases for TS 3.4.7, which summarize the reasons for the specifications, are revised to clarify the specified safety function for each required instrument in the Limiting Condition for Operation (LCO), delete discussion from the TS Bases that could be construed to alter the meaning of TS operability requirements, and reflect the changes made to TS 3.4.7. The TS Bases changes are provided for information only (Attachment 2) and will be processed in accordance with the NMP2 Bases Control Program, TS 5.5.10, Technical Specification (TS) Bases Control Program.

Nine Mile Point Nuclear Station, LLC (NMPNS) is not proposing variations or deviations from the TS changes described in TSTF-514, Revision 3, or the NRC staff's model safety evaluation (SE) published in the *Federal Register* on December 17, 2010 (75 FR 79048) as part of the CLIIP Notice of Availability.

Minor changes are proposed to be made to Bases pages B 3.4.7-1 and B 3.4.7-3, that were not identified as a change in TSTF-514, Revision 3, upon implementation of the amendment. On page B 3.4.7-1, the word "three" will be substituted for the word "two" in the sentence "LEAKAGE from the RCPB inside the drywell is detected by at least one of three independently monitored variables, such as drywell floor drain tank fill rate changes and drywell gaseous and particulate radioactivity levels." This change simply reflects the fact that three independent variables exist at NMP2. Words were added to page B 3.4.7-3 (Insert A to the marked-up Bases pages) to clarify that surveillance tests are used to determine monitoring system operability. Also, note that the NMP2 Bases description of the drywell floor drain tank fill rate monitoring system varies slightly from the Bases description provided in the TSTF-514, Revision 3 mark-up. These variations have no impact on the conclusions delineated in the Staff's model safety evaluation.

3.0 BACKGROUND

NRC Information Notice (IN) 2005-24, "Nonconservatism in Leakage Detection Sensitivity," dated August 3, 2005, informed addressees that the reactor coolant activity assumptions for primary containment atmosphere gaseous radioactivity monitors may be non-conservative. This means the monitors may not be able to detect a one gallon per minute leak within one hour. Some licensees, in response to IN 2005-24, have taken action to remove the gaseous radioactivity monitor from the TS list of required monitors. However, industry experience has shown that the primary containment atmosphere gaseous radiation monitor is often the first monitor to indicate an increase in RCS leak rate. As a result, the TSTF and the NRC staff met on April 29, 2008, and April 14, 2009, to develop an alternative approach to address the issue identified in IN 2005-24. The agreed solution is to retain the primary containment atmosphere gaseous radiation monitor in the LCO list of required equipment, revise the specified safety function of the gaseous monitor to specify the required instrument sensitivity level, revise the Actions requiring additional monitoring, and provide less time before a plant shutdown is required when the primary containment atmosphere gaseous radiation monitor is the only operable monitor.

4.0 TECHNICAL ANALYSIS

NMPNS has reviewed TSTF-514, Revision 3, and the model SE published on December 17, 2010 (75 FR 79048) as part of the CLIIP Notice of Availability. NMPNS has concluded that the technical bases presented in TSTF 514, Revision 3, and the model SE prepared by the NRC staff are applicable to NMP2.

The NMP2 primary methods for detecting a small unidentified leak within the primary containment include continuous monitoring of drywell floor drain tank fill rate and airborne gaseous and particulate radioactivity increases (Updated Safety Analysis Report (USAR) Section 5.2.5.1.1). The drywell leakage collected in the floor drain tank includes unidentified leakage from the control rod drives (CRD), valve flanges, component cooling water, service water, air cooler drains, and any leakage not connected to the equipment drain sump. The fission product monitoring system continuously monitors the primary containment atmosphere for airborne radioactivity (iodine, noble gases, and particulates) (USAR Section 5.2.5.2.1). Instrumentation that monitors these parameters is located in TS 3.4.7, "RCS Leakage Detection Instrumentation."

USAR Section 3.1.2.30, "Quality of Reactor Coolant Pressure Boundary (Criterion 30)," provides a discussion of the criterion and NMP2's design conformance to GDC 30 of 10 CFR 50, Appendix A. The criterion, in part, states that a means shall be provided for detecting and, to the extent practical, identifying the location of the source of the reactor coolant leakage. NMP2's position regarding design conformance indicates that the leak detection system provides a means for detecting reactor coolant leakage and consists of sensors and instruments to detect, annunciate, and in some cases isolate the Reactor Coolant Pressure Boundary (RCPB) from potentially hazardous leaks before predetermined limits are exceeded. The leak detection system is designed to meet the requirements of GDC 30 of 10 CFR 50, Appendix A.

NMP2 conforms with the Regulatory Position (paragraph C) of Regulatory Guide (RG) 1.45 (May 1973), as described in USAR Section 5.2.5.9, with an alternate approach to Position C.5. Section 5.2.5.9 states that leakage is separated into identified and unidentified categories and each is independently monitored, thus meeting position C.1 of RG 1.45. Leakage from unidentified sources inside the primary containment is collected into the floor drain sump and monitored with an accuracy better than 1 gpm, thus meeting position C.2. By monitoring (1) floor and equipment drain sump fillup and pump out rates, (2) airborne

particulates, and (3) airborne gaseous radiation rate, position C.3 is satisfied. Radiation monitoring of cooling water from identified system heat exchangers satisfies position C.4. The sensitivity and response time of each leakage detection system is consistent with equipment capabilities available in the industry (Position C.5), as noted in USAR Table 1.8-1, "Conformance with Division 1 NRC Regulatory Guides." The floor drain sump monitoring, air particulates monitoring, and gaseous radiation monitoring are designed to detect the leakage rates given in USAR Table 5.2-8. Regarding position C.6, all leakage detection systems are designed to be capable of performing their safety functions following seismic events that do not require plant shutdown. Thus, position C.6 is met. Leak detection indicators, alarms, procedures and graphs are provided to satisfy position C.7. The leakage detection systems are equipped with provisions to permit testing for operability and calibration during plant operation thus satisfying position C.8. The NMP2 TSs comply with position C.9.

The proposed TS changes will include the addition of Required Action C.1 to analyze grab samples of the drywell atmosphere and Required Action C.2 to monitor RCS leakage by administrative means. The administrative means of monitoring will include diverse alternative methods from which appropriate indicators may be selected based on plant conditions. NMPNS will utilize the following method or methods considering the plant conditions and historical or expected sources of unidentified leakage: drywell pressure, drywell temperature, drywell unit coolers inlet and outlet air temperatures, and drywell unit cooler outlet cooling water temperature (Reactor Building Closed Loop Cooling System).

Actions to verify that these indications have not increased since the required TS monitors became inoperable and the Required Action to analyze drywell atmospheric grab samples are sufficient to alert the operating staff to an unexpected increase in RCS leakage.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration Determination

Nine Mile Point Nuclear Station, LLC (NMPNS) has evaluated the proposed changes to the Technical Specifications (TS) using the criteria in 10 CFR 50.92 and has determined that the proposed changes do not involve a significant hazards consideration. An analysis of the issue of no significant hazards consideration is presented below:

Description of Amendment Request: The proposed amendment would revise TS 3.4.7, "RCS Leakage Detection Instrumentation," Conditions and Required Actions.

Basis for proposed no significant hazards consideration determination: As required by 10 CFR 50.91(a), the NMPNS analysis of the issue of no significant hazards consideration using the standards in 10 CFR 50.92 is presented below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed change clarifies the operability requirements for the RCS leakage detection instrumentation and reduces the time allowed for the plant to operate when the only TS-required operable Reactor Coolant System (RCS) leakage detection instrumentation monitor is the drywell atmospheric gaseous radioactivity monitor. The monitoring of RCS leakage is not a precursor to

any accident previously evaluated. The monitoring of RCS leakage is not used to mitigate the consequences of any accident previously evaluated. Therefore, it is concluded that this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed change clarifies the operability requirements for the RCS leakage detection instrumentation and reduces the time allowed for the plant to operate when the only TS-required operable RCS leakage detection instrumentation monitor is the drywell atmospheric gaseous radioactivity monitor. The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, it is concluded that the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No.

   The proposed change clarifies the operability requirements for the RCS leakage detection instrumentation and reduces the time allowed for the plant to operate when the only TS-required operable RCS leakage detection instrumentation monitor is the drywell atmospheric gaseous radioactivity monitor. Reducing the amount of time the plant is allowed to operate with only the drywell atmospheric gaseous radioactivity monitor operable increases the margin of safety by increasing the likelihood that an increase in RCS leakage will be detected before it potentially results in gross failure. Therefore, it is concluded that the proposed change does not involve a significant reduction in a margin of safety.

Based upon the above analysis, NMPNS concludes that the requested change does not involve a significant hazards consideration, as set forth in 10 CFR 50.92(c).

5.2 Applicable Regulatory Requirements/Criteria

A description of the proposed TS change and its relationship to applicable regulatory requirements were published in the *Federal Register* Notice of Availability on December 17, 2010 (75 FR 79048). NMPNS has reviewed the NRC staff's model SE referenced in the CLIIP Notice of Availability and concluded that the regulatory evaluation section is applicable to NMP2. Note that NMP2 is not committed to RG 1.45, Revision 1, "Guidance on Monitoring and Responding to Reactor Coolant System Leakage," issued on May 2008.

6.0 ENVIRONMENTAL CONSIDERATION

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any

effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

7.0 REFERENCES

(1) Technical Specification Task Force (TSTF) Improved Standard Technical Specification (STS) Change Traveler TSTF-514, "Revise BWR Operability Requirements and Actions for RCS Leakage Instrumentation," Revision 3

ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

The current versions of the following NMP2 Technical Specification pages have been marked-up by hand to reflect the proposed changes:

3.4.7-1
3.4.7-2

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Leakage Detection Instrumentation

LCO 3.4.7 The following RCS leakage detection instrumentation shall be OPERABLE:

a. Drywell floor drain tank fill rate monitoring system; and

b. One channel of either drywell atmospheric particulate or atmospheric gaseous monitoring system.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell floor drain tank fill rate monitoring system inoperable.	A.1 Restore drywell floor drain tank fill rate monitoring system to OPERABLE status.	30 days
B. Required drywell atmospheric monitoring system inoperable.	B.1 Analyze grab samples of drywell atmosphere. AND B.2 Restore required drywell atmospheric monitoring system to OPERABLE status.	Once per 12 hours 30 days

(continued)

Insert 1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A, or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours
D. All required leakage detection systems inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTE----------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the other required leakage detection instrumentation is OPERABLE.

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Perform CHANNEL CHECK of required drywell atmospheric monitoring system.	12 hours
SR 3.4.7.2	Perform CHANNEL FUNCTIONAL TEST of the drywell floor drain tank fill rate monitoring system.	31 days
SR 3.4.7.3	Perform source check of required drywell atmospheric monitoring system.	31 days

(continued)

INSERT 1 (for TS page 3.4.7-1)

---------- NOTE ---------- Only applicable when the drywell atmospheric gaseous monitoring system is the only OPERABLE monitor. ----------	C.1	Analyze grab samples of the drywell atmosphere.	Once per 12 hours
	AND		
	C.2	Monitor RCS LEAKAGE by administrative means.	Once per 12 hours
C. Drywell floor drain tank fill rate monitoring system inoperable.	AND		
	C.3	Restore drywell floor drain tank fill rate monitoring system to OPERABLE status.	7 days

ATTACHMENT 2

PROPOSED TECHNICAL SPECIFICATION BASES CHANGES (MARK-UP)

The current versions of the following NMP2 Technical Specification Bases pages have been marked-up by hand to reflect the proposed changes. These changes are provided for information only:

B 3.4.7-1
B 3.4.7-2
B 3.4.7-3
B 3.4.7-4
B 3.4.7-6

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.7 RCS Leakage Detection Instrumentation

, Revision 0

BASES

BACKGROUND

GDC 30 of 10 CFR 50, Appendix A (Ref. 1), requires means for detecting and, to the extent practical, identifying the location of the source of RCS LEAKAGE. Regulatory Guide 1.45 (Ref. 2) describes acceptable methods for selecting leakage detection systems.

Limits on LEAKAGE from the reactor coolant pressure boundary (RCPB) are required so that appropriate action can be taken before the integrity of the RCPB is impaired (Ref. 2). Leakage detection systems for the RCS are provided to alert the operators when leakage rates above normal background levels are detected and also to supply quantitative measurement of rates. The Bases for LCO 3.4.5, "RCS Operational LEAKAGE," discuss the limits on RCS LEAKAGE rates.

In addition to meeting the OPERABILITY requirements, the monitors are typically set to provide the most sensitive response without causing an excessive number of spurious alarms.

Systems for separating the LEAKAGE of an identified source from an unidentified source are necessary to provide prompt and quantitative information to the operators to permit them to take immediate corrective action.

LEAKAGE from the RCPB inside the drywell is detected by at least one of ~~two~~ three independently monitored variables, such as drywell floor drain tank fill rate changes and drywell gaseous and particulate radioactivity levels. The primary means of quantifying LEAKAGE in the drywell is the drywell floor drain tank fill rate monitoring system.

The drywell floor drain tank fill rate monitoring system monitors the LEAKAGE collected in the floor drain tank. This unidentified LEAKAGE consists of LEAKAGE from control rod drives, valve flanges or packings, floor drains, component cooling water, and drywell air cooling unit condensate drains, and any LEAKAGE not collected in the drywell equipment drain tank. Leakage into the drywell floor drain system flows through a piping header that penetrates the containment wall and is then directed to the drywell floor drain tank located in the reactor building. The drywell floor drain tank is monitored by one level transmitter that supplies level indication in the main control room.

(continued)

BASES

BACKGROUND (continued)

Two drywell floor drain pumps take suction from the drywell floor drain tank and discharge to the Liquid Radioactive Waste System via the reactor building floor drain system header. The pumps alternate as lead and backup on each successive start. When a high level is reached in the floor drain tank, a level switch actuates to start the lead floor drain pump. In the event the level continues to rise, a second level switch actuates to start the backup floor drain pump. When the level decreases to a low level, both floor drain pumps are stopped. A flow indicator in the discharge line of the drywell floor drain pumps provides flow indication in the control room. In addition, a leak rate recorder is provided capable of identifying a 1 gpm change over an hour period.

The drywell atmospheric monitoring systems (particulate and gaseous) continuously monitor the drywell atmosphere for airborne particulate and gaseous radioactivity. A sudden increase of radioactivity, which may be attributed to RCPB steam or reactor water LEAKAGE, is annunciated in the control room. The drywell atmosphere particulate and gaseous radioactivity monitoring systems are not capable of quantifying leakage rates, but are sensitive enough to indicate increased LEAKAGE rates of 1 gpm within 1 hour (Ref. 3). Larger changes in LEAKAGE rates are detected in proportionally shorter times.

APPLICABLE SAFETY ANALYSES

A threat of significant compromise to the RCPB exists if the barrier contains a crack that is large enough to propagate rapidly. LEAKAGE rate limits are set low enough to detect the LEAKAGE emitted from a single crack in the RCPB (Refs. 4 and 8). Each of the leakage detection systems inside the drywell is designed with the capability of detecting LEAKAGE less than the established LEAKAGE rate limits and providing appropriate alarm of excess LEAKAGE in the control room.

A control room alarm allows the operators to evaluate the significance of the indicated LEAKAGE and, if necessary, shut down the reactor for further investigation and corrective action. The allowed LEAKAGE rates are well below the rates predicted for critical crack sizes (Ref. 8). Therefore, these actions provide adequate response before a significant break in the RCPB can occur.

RCS leakage detection instrumentation satisfies Criterion 1 of Reference 7.

(continued)

BASES (continued)

LCO

Insert A

The drywell floor drain tank fill rate monitoring system is required to quantify the unidentified LEAKAGE from the RCS. The other monitoring system (particulate or gaseous) provides early alarms to the operators so closer examination of other detection systems will be made to determine the extent of any corrective action that may be required. With the leakage detection systems inoperable, monitoring for LEAKAGE in the RCPB is degraded.

APPLICABILITY

In MODES 1, 2, and 3, leakage detection systems are required to be OPERABLE to support LCO 3.4.5. This Applicability is consistent with that for LCO 3.4.5.

ACTIONS

A.1

With the drywell floor drain tank fill rate monitoring system inoperable, no other form of sampling can provide the equivalent information to quantify leakage. However, the drywell atmospheric activity monitor will provide indications of changes in leakage.

With the drywell floor drain tank fill rate monitoring system inoperable, but with RCS unidentified and total LEAKAGE being determined every 12 hours (SR 3.4.5.1), operation may continue for 30 days. The 30 day Completion Time of Required Action A.1 is acceptable, based on operating experience, considering the multiple forms of leakage detection that are still available.

1

B.1 and B.2

With both gaseous and particulate drywell atmospheric monitoring channels inoperable (i.e., the required drywell atmospheric monitoring system), grab samples of the drywell atmosphere shall be taken and analyzed to provide periodic leakage information. Provided a sample is obtained and

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

analyzed every 12 hours, the plant may be operated for up to 30 days to allow restoration of at least one of the required monitors.

The 12 hour interval provides periodic information that is adequate to detect LEAKAGE. The 30 day Completion Time for restoration recognizes that at least one other form of leakage detection is available.

Insert B

1

D

~~C~~.1 and ~~C~~.2

1 or C

If any Required Action and associated Completion Time of Condition ~~A, or~~ B cannot be 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 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions in an orderly manner and without challenging plant systems.

E

~~D~~.1

With all required monitors inoperable, no required automatic means of monitoring LEAKAGE are available, and immediate plant shutdown in accordance with LCO 3.0.3 is required.

SURVEILLANCE REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the other required instrumentation (either the drywell floor drain tank fill rate monitoring system or the drywell atmospheric monitoring channel, as applicable) is OPERABLE. Upon completion of the Surveillance, or

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.7.5

This SR requires the performance of a CHANNEL CALIBRATION of the required RCS leakage detection instrumentation channels. The calibration verifies the accuracy of the instrument string, including the instruments located inside the drywell. The Frequency of 24 months is a typical refueling cycle and considers channel reliability. Operating experience has proven this Frequency is acceptable.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 30.
2. Regulatory Guide 1.45, May 1973.
3. ~~USAR, Section 5.2.5.1.1.~~
4. GEAP-5620, "Failure Behavior in ASTM A106B Pipes Containing Axial Through-Wall Flaws," April 1968.
5. NUREG-75/067, "Investigation and Evaluation of Cracking in Austenitic Stainless Steel Piping of Boiling Water Reactors," October 1975.
6. USAR, Section 5.2.5.5.3.
7. 10 CFR 50.36(c)(2)(ii).

Revision 0, "Reactor Coolant Pressure Boundary Leakage Detection Systems"

7. USAR, Section 5.2.5.1.1

INSERT A (for TS Bases page B 3.4.7-3)

This LCO requires instruments of diverse monitoring principles to be OPERABLE to provide confidence that small amounts of unidentified LEAKAGE are detected in time to allow actions to place the plant in a safe condition, when RCS LEAKAGE indicates possible RCPB degradation.

The LCO requires two instruments to be OPERABLE.

The drywell floor drain tank fill rate monitoring system is required to quantify the unidentified LEAKAGE rate from the RCS. Thus, for the system to be considered OPERABLE it must be capable of determining the leakage rate. The identification of an increase in unidentified LEAKAGE will be delayed by the time required for the unidentified LEAKAGE to travel to the drywell floor drain tank and it may take longer than one hour to detect a 1 gpm increase in unidentified LEAKAGE, depending on the origin and magnitude of the LEAKAGE. This sensitivity is acceptable for drywell floor drain tank fill rate monitoring system OPERABILITY.

The reactor coolant contains radioactivity that, when released to the drywell, can be detected by the gaseous or particulate drywell atmospheric radioactivity monitor. Only one of the two detectors is required to be OPERABLE. Radioactivity detection systems are included for monitoring both particulate and gaseous activities because of their sensitivities and rapid responses to RCS LEAKAGE, but have recognized limitations. Reactor coolant radioactivity levels will be low during initial reactor startup and for a few weeks thereafter, until activated corrosion products have been formed and fission products appear from fuel element cladding contamination or cladding defects. If there are few fuel element cladding defects and low levels of activation products, it may not be possible for the gaseous or particulate drywell atmospheric radioactivity monitors to detect a 1 gpm increase within 1 hour during normal operation. The gaseous or particulate drywell atmospheric radioactivity monitor is OPERABLE when it is capable of detecting a 1 gpm increase in unidentified LEAKAGE within 1 hour given an RCS activity equivalent to that assumed in the design calculations for the monitors (Reference 7). This is shown by performance of the required surveillance tests.

The LCO is satisfied when monitors of diverse measurement means are available. Thus, the drywell floor drain tank fill rate monitoring system, in combination with a gaseous or particulate drywell atmospheric radioactivity monitor, provides an acceptable minimum.

INSERT B (for TS Bases page B 3.4.7-4)

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

With the drywell floor drain tank fill rate monitoring system inoperable, the only means of detecting LEAKAGE is the drywell atmospheric gaseous radioactivity monitor. A Note clarifies this applicability of the Condition. The drywell atmospheric gaseous radioactivity monitor typically cannot detect a 1 gpm leak within one hour when RCS activity is low. In addition, this configuration does not provide the required diverse means of leakage detection. Indirect methods of monitoring RCS leakage must be implemented. Grab samples of the drywell atmosphere must be taken and analyzed and monitoring of RCS leakage by administrative means must be performed every 12 hours to provide alternate periodic information.

Administrative means of monitoring RCS leakage include monitoring and trending parameters that may indicate an increase in RCS leakage. There are diverse alternative mechanisms from which appropriate indicators may be selected based on plant conditions. It is not necessary to utilize all of these methods, but a method or methods should be selected considering the current plant conditions and historical or expected sources of unidentified leakage. NMPNS will utilize the following method or methods considering the plant conditions and historical or expected sources of unidentified leakage: drywell pressure, drywell temperature, drywell unit coolers inlet and outlet air temperatures, and drywell unit cooler outlet cooling water temperature (Reactor Building Closed Loop Cooling System).

These indications, coupled with the atmospheric grab samples, are sufficient to alert the operating staff to an unexpected increase in unidentified LEAKAGE.

The 12 hour interval is sufficient to detect increasing RCS leakage. The Required Action provides 7 days to restore another RCS leakage monitor to OPERABLE status to regain the intended leakage detection diversity. The 7 day Completion Time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.