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U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

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Docket Nos.	50-336
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License Nos.	DPR-65
	NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNITS 2 AND 3
REACTOR COOLANT SYSTEM LEAKAGE DETECTION SYSTEMS
(LBDCRS 07-MP2-012 AND 07-MP3-032)

Currently MPS2 and 3 Technical Specifications 3.4.6.1 allow continued operation of the respective facility for a limited period of time when only the gaseous radiation monitor channel is available for Reactor Coolant System (RCS) leakage detection. While these monitors continue to provide leakage detection and trending capability, improvements in nuclear fuel reliability over time have resulted in baseline RCS coolant radioactivity being reduced to a level far below that used for original design specification for these monitors. The reduction in baseline activity limits the effectiveness of the monitor relative to detecting very small leaks or very small changes in the leakrate. Under these circumstances, DNC believes it is prudent to remove credit for these monitors from the Technical Specifications. Accordingly, pursuant to 10 CFR 50.90, Dominion Nuclear Connecticut, Inc. (DNC) hereby requests to amend Operating Licenses DPR-65 and NPF-49 for Millstone Power Station Units 2 and 3 (MPS2 and MPS3), respectively. The proposed changes would modify Technical Specification (TS) 3.3.3.1, "Radiation Monitoring," and TS 3.4.6.1, "Reactor Coolant System Leakage Detection Systems," at each unit to specifically require only one containment radioactivity monitor (particulate channel) to be operable in Modes 1, 2, 3 and 4. Additionally, corresponding changes to Surveillance Requirement 4.4.6.1 are also proposed at each unit.

The proposed amendment does not involve a Significant Hazards Consideration pursuant to the provisions of 10 CFR 50.92 (see Significant Hazards Consideration in Attachment 1). The Site Operations Review Committee has reviewed and concurred with this determination.

With respect to the removal of the containment atmosphere gaseous radioactivity monitor, the NRC approved similar license amendments for South Texas Project, Units 1 and 2, (TAC Nos. MC7258 and MC7259), on October 17, 2005, and for Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2, (TAC NOS. MC0509, MC0510, MC0507, and MC0508), on January 14, 2005. However DNC's proposed amendment also includes an additional action to address the condition where all specified monitors are inoperable.

A001

NRR

DNC is requesting NRC staff review and approval of the proposed change by August 31, 2008 with a 90-day implementation period.

In accordance with 10 CFR 50.91(b), a copy of this license amendment request is being provided to the State of Connecticut.

If you should have any questions regarding this submittal, please contact Ms. Margaret A. Earle at (804) 273-2768.

Very truly yours,

Gerald T. Bischof
Vice President – Nuclear Engineering

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Gerald T. Bischof, who is Vice President - Nuclear Engineering of Dominion Nuclear Connecticut, Inc. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 15th day of August, 2007.

My Commission Expires: August 31, 2008.

MARGARET B. BENNETT
Notary Public 354302
Commonwealth of Virginia
My Commission Expires Aug 31, 2008

Margaret B. Bennett
Notary Public

Attachments:

1. Evaluation of Proposed License Amendments, MPS2 and MPS3
2. Marked-Up TS Pages, MPS2
3. Marked-Up TS Pages, MPS3
4. Marked-Up TS Bases Pages, MPS2 and MPS3, for information only

Commitments made in this letter: None.

cc: U.S. Nuclear Regulatory Commission
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ATTACHMENT 1

LICENSE AMENDMENT REQUEST (LBDCR 07-MP2-012 AND LBDCR 07-MP3-032) REACTOR COOLANT SYSTEM LEAKAGE DETECTION SYSTEMS

EVALUATION OF PROPOSED LICENSE AMENDMENTS

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNITS 2 AND 3

EVALUATION OF PROPOSED LICENSE AMENDMENTS

1.0 SUMMARY DESCRIPTION

2.0 PROPOSED CHANGES

3.0 BACKGROUND
- 3.1 MPS2 Leakage Detection System
- 3.2 MPS3 Leakage Detection System
- 3.3 Reason for Proposed Amendment

4.0 TECHNICAL EVALUATION
- 4.1 Detailed Description
- 4.2 Summary

5.0 REGULATORY EVALUATION
- 5.1 Applicable Regulatory Requirements
- 5.2 Precedent
- 5.3 Significant Hazards Consideration

6.0 ENVIRONMENTAL CONSIDERATION

1.0 SUMMARY DESCRIPTION

Pursuant to 10 CFR 50.90, Dominion Nuclear Connecticut, Inc. (DNC) hereby requests to amend Operating Licenses DPR-65 and NPF-49 for Millstone Power Station Units 2 and 3 (MPS2 and MPS3), respectively. The proposed changes would modify Technical Specification (TS) 3.4.6.1, "Reactor Coolant System Leakage Detection Systems," at each unit to specifically require only one containment radioactivity monitor (particulate channel) to be operable in Modes 1, 2, 3 and 4. Additionally, corresponding changes to Surveillance Requirement 4.4.6.1 are also proposed at each unit.

2.0 PROPOSED CHANGES

DNC proposes the following changes.

Change 1

MPS2

Current Table 3.3-6, Instrument 2.b

2.b Containment Atmosphere – Gaseous

Proposed Table 3.3-6, Instrument 2.b

2.b Deleted

Change 2

MPS2

Current Table 4.3-3, Instrument 2.b

2.b Containment Atmosphere – Gaseous

Proposed Table 4.3-3, Instrument 2.b

2.b Deleted

Change 3

MPS2

Current TS 3.4.6.1 LCO

3.4.6.1 The following Reactor Coolant System leakage detection systems shall be OPERABLE:

a. A containment atmosphere particulate radioactivity monitoring system,

b. The containment sump level monitoring system, and

c. A containment atmosphere gaseous radioactivity monitoring system.

Proposed TS 3.4.6.1 LCO

3.4.6.1 The following Reactor Coolant System leakage detection systems shall be OPERABLE:

a. One of two containment atmosphere particulate radioactivity monitoring channels, and

b. The containment sump level monitoring system.

Change 4

MPS2

Current TS 3.4.6.1 ACTIONs

a. With one of the above radioactivity monitoring leakage detection systems inoperable, operations may continue for up to 30 days provided:

1. The other two above required leakage detection systems are OPERABLE, and

2. Appropriate grab samples are obtained and analyzed at least once per 24 hours;

otherwise, be in COLD SHUTDOWN within the next 36 hours.

b. With the containment sump level monitoring system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in COLD SHUTDOWN within the next 36 hours.

Proposed TS 3.4.6.1 ACTIONs

a. With both of the containment atmosphere particulate radioactivity monitoring channels inoperable, operation may continue for up to 30 days provided:

    1. Appropriate grab samples of the containment atmosphere are obtained and analyzed for particulate radioactivity at least once per 24 hours, or

    2. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1 at least once per 24 hours during steady state operation.

    Otherwise, be in COLD SHUTDOWN within the next 36 hours.

b. With the containment sump level monitoring system inoperable, operation may continue for up to 30 days provided:

    1. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1 at least once per 24 hours during steady state operation.

    Otherwise, be in COLD SHUTDOWN within the next 36 hours.

c. With both of the containment atmosphere particulate radioactivity monitoring channels inoperable and the containment sump level monitoring system inoperable, operation may continue for up to 7 days provided:

    1. Appropriate grab samples of the containment atmosphere are obtained and analyzed for particulate radioactivity at least once per 24 hours, and

    2. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1 at least once per 24 hours during steady state operation, and

    3. Alternate leakage detection monitoring indicates no increasing trend in the rate of Reactor Coolant System leakage.

    Otherwise, be in COLD SHUTDOWN within the next 36 hours.

Change 5

MPS2

Current TS 4.4.6.1 SURVEILLANCE REQUIREMENT 'a'

4.4.6.1 The leakage detection systems shall be demonstrated OPERABLE by:

a. Containment atmosphere gaseous and particulate monitoring systems-performance of CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST at the frequencies specified in Table 4.3-3, and

Proposed TS 4.4.6.1 SURVEILLANCE REQUIREMENT 'a'

4.4.6.1 The leakage detection systems shall be demonstrated OPERABLE by:

a. Containment atmosphere particulate monitoring system - performance of CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST at the frequencies specified in Table 4.3-3, and

Change 6

MPS3

Current TS 3.3.3.1, Table 3.3-6, FUNCTIONAL UNIT 1.b.2

1.b.2 Gaseous Radioactivity

Proposed TS 3.3.3.1, Table 3.3-6, FUNCTIONAL UNIT 1.b.2

1.b.2 Deleted

Change 7

MPS3

Current TS 4.3.3.1, Table 4.3-3, FUNCTIONAL UNIT 1.b.2

1.b.2 Gaseous Radioactivity

Proposed TS 4.3.3.1, Table 4.3-3, FUNCTIONAL UNIT 1.b.2

1.b.2 Deleted

Change 8

MPS3

Current TS 3.4.6.1 LCO

3.4.6.1 The following Reactor Coolant System Leakage Detection Systems shall be OPERABLE:

a. Either the Containment Atmosphere Gaseous or Particulate Radioactivity Monitoring System, and

b. The Containment Drain Sump Level or Pumped Capacity Monitoring System.

Proposed TS 3.4.6.1 LCO

3.4.6.1 The following Reactor Coolant System Leakage Detection Systems shall be OPERABLE:

a. The Containment Atmosphere Particulate Radioactivity Monitoring System, and

b. The Containment Drain Sump Monitoring System.

Change 9

MPS3

Current TS 3.4.6.1 ACTIONs

a. With both the Containment Atmosphere Gaseous and Particulate Radioactivity Monitors inoperable, operation may continue for up to 30 days provided the Containment Drain Sump Level or Pumped Capacity Monitoring System is OPERABLE and gaseous grab samples of the containment atmosphere are obtained at least once per 12 hours and analyzed for gross

noble gas activity within the subsequent 2 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the Containment Drain Sump Level or Pumped Capacity Monitoring System inoperable, operation may continue for up to 30 days provided either the Containment Atmosphere Gaseous or Particulate Radioactivity Monitoring System is OPERABLE; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Proposed TS 3.4.6.1 ACTIONs

a. With the Containment Atmosphere Particulate Radioactivity Monitor inoperable, operations may continue for up to 30 days provided:

    1. Appropriate grab samples of the containment atmosphere are obtained and analyzed for particulate radioactivity at least once per 24 hours, or

    2. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1.d at least once per 24 hours during steady state operation.

    Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the Containment Drain Sump Monitoring System inoperable, operation may continue for up to 30 days provided:

    1. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1.d at least once per 24 hours during steady state operation.

    Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With the Containment Atmosphere Particulate Radioactivity Monitor inoperable and the Containment Drain Sump Monitoring System inoperable, operation may continue for up to 7 days provided:

    1. Appropriate grab samples of the containment atmosphere are obtained and analyzed for particulate radioactivity at least once per 24 hours, and

    2. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1.d at least once per 24 hours during steady state operation, and

3. Alternate leakage detection monitoring indicates no increasing trend in the rate of Reactor Coolant System leakage.

Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Change 10

MPS3

Current TS 4.4.6.1 SURVEILLANCE REQUIREMENT 'a'

4.4.6.1 The Leakage Detection Systems shall be demonstrated OPERABLE by:

a. Containment Atmosphere Gaseous and Particulate Radioactivity Monitoring Systems-performance of CHANNEL CHECK, CHANNEL CALIBRATION, and ANALOG CHANNEL OPERATIONAL TEST at the frequencies specified in Table 4.3-3, and

b. Containment Drain Sump Level and Pumped Capacity Monitoring System - performance of CHANNEL CALIBRATION at least once per 24 months

Proposed TS 4.4.6.1 SURVEILLANCE REQUIREMENT 'a'

4.4.6.1 The Leakage Detection Systems shall be demonstrated OPERABLE by:

a. Containment Atmosphere Particulate Radioactivity Monitoring System - performance of CHANNEL CHECK, CHANNEL CALIBRATION, and ANALOG CHANNEL OPERATIONAL TEST at the frequencies specified in Table 4.3-3, and

b. Containment Drain Sump Monitoring System - performance of CHANNEL CALIBRATION at least once per 24 months

MPS2 and MPS3 Proposed Bases Pages

TS Bases Section 3/4.4.6.1, "Leakage Detection Systems," will also be updated to reflect the proposed TS changes. The TS Bases changes are provided for information

only in Attachment 4. Changes to the Bases are controlled in accordance with the TS Bases Control Program (MPS2 TS 6.23 and MPS3 TS 6.18).

3.0 BACKGROUND

The Reactor Coolant System (RCS) Leakage Detection Systems required by TS 3.4.6.1 are provided to monitor and detect leakage from the Reactor Coolant Pressure Boundary (RCPB). Currently MPS2 and 3 Technical Specifications 3.4.6.1 allow continued operation of the respective facility for a limited period of time when only the gaseous radiation monitor channel is available for Reactor Coolant System (RCS) leakage detection. While these monitors continue to provide leakage detection and trending capability, improvements in nuclear fuel reliability over time have resulted in baseline RCS coolant radioactivity being reduced to a level far below that used for original design specification for these monitors. The reduction in baseline activity limits the effectiveness of the monitor relative to detecting very small leaks or very small changes in the leakrate. Under these circumstances, DNC believes it is prudent to remove credit for these monitors from the Technical Specifications.

3.1 MPS2 Leakage Detection System

The MPS2 RCS leakage detection systems consist of a containment atmosphere particulate radioactivity monitoring system (two channels), the containment sump level monitoring system, and a containment atmosphere gaseous radioactivity monitoring system (two channels). The containment atmosphere particulate radioactivity monitoring system and the containment atmosphere gaseous radioactivity monitoring system are used as part of the reactor coolant pressure boundary (RCPB) leakage detection system. These two systems provide indirect measurement of RCS leakage.

The containment airborne gaseous and particulate radioactivity monitoring system continuously monitors samples from the containment atmosphere, which are drawn outside the containment in a closed system. The particulate portion of that monitor detects the accumulation of airborne activity. The activity increase is indirectly related to the magnitude of RCPB leakage into the containment.

Currently, the containment airborne particulate radioactivity monitoring system alarm design setpoint is established at a lower value of approximately 2E+5 cpm. Additionally, plant process computer generated alarm setpoints for containment airborne particulate radioactivity are set at values even lower than 2E+5 cpm to increase the sensitivity to RCS leakage and improve operator awareness of changes in containment atmosphere radioactivity levels.

The display for the containment airborne gaseous radioactivity monitoring system is in units of cpm. Currently, the containment airborne gaseous radioactivity monitoring system alarm design setpoint is established at a value of approximately 7E+4 cpm. Additionally, plant process computer generated alarm setpoints for containment airborne gaseous radioactivity are set at values even lower than 7E+4 cpm to increase the sensitivity to RCS leakage and improve operator awareness of changes in containment atmosphere radioactivity levels.

Additional diverse means of leakage detection are available as part of the overall MPS2 leakage detection capability. For example, non-TS required Volume Control Tank (VCT) level is monitored in the control room and can be trended via the plant process computer or manually. A total leakage calculation for RCS water inventory balance is normally performed using the plant process computer at steady state power conditions. The RCS leakage calculation program measures the inventory changes in the RCS, CVCS, and associated system drain tanks. The inventory change in the systems is converted to identified and unidentified leak rates using the time interval of the inventory measurement. The water inventory balance calculated can provide indication of a one gallon per minute leakrate change during steady state operations. Alternate leakage detection monitoring includes Volume Control Tank (VCT) level indication, containment temperature indication, and containment pressure instrumentation. These instruments provide indication in the main control room and can be trended via the plant process computer or manually. The plant process computer programs, or manual equivalents, that calculate RCS leakrates utilize parameters (e.g., VCT level, charging pump flow) in addition to those specified in the TS and provide the capability to continuously detect an increasing leakrate. Changes in the alternate leakage detection monitoring parameters may directly or indirectly indicate reactor coolant leakage to the containment atmosphere.

The containment atmosphere radiation monitors are further described in UFSAR Sections 4.5.5, "Leak Detection," and 7.5.6.3.2.1.2, "Containment Gaseous and Particulate Monitoring."

3.2 MPS3 Leakage Detection System

The MPS3 RCS leakage detection systems consist of either the containment atmosphere gaseous or particulate radioactivity monitoring system, and the containment drain sump level or pumped capacity monitoring system. The containment atmosphere particulate radioactivity monitoring system and the containment atmosphere gaseous radioactivity monitoring system are used as part of the reactor coolant pressure boundary (RCPB) leakage detection system. These two systems provide indirect measurement of RCS leakage.

The containment airborne gaseous and particulate radioactivity monitoring system continuously monitors samples from the containment atmosphere, which are drawn outside the containment in a closed system. The particulate channel of that monitor detects the accumulation of airborne activity. The activity increase is indirectly related to the magnitude of RCPB leakage into the Containment.

Currently, containment airborne particulate radioactivity monitoring system Alert and Alarm design setpoints are approximately 6E-9 µCi/cc and 8E-9 µCi/cc, respectively. The Alert and Alarm setpoints are routinely adjusted to provide prompt indication to the operators of increases in RCS leakage and improve operator awareness of changes in containment atmosphere radioactivity levels.

The display for the containment airborne gaseous radioactivity monitoring system is in units of µCi/cc. Currently the containment airborne gaseous radioactivity monitoring system Alert and Alarm setpoints are approximately 7E-6 µCi/cc and 9E-6 µCi/cc, respectively. The Alert and Alarm setpoints are routinely adjusted to provide prompt indication to the operators of increases in RCS leakage and improve operator awareness of changes in containment atmosphere radioactivity levels.

Additional diverse means of leakage detection are available as part of the overall MPS3 leakage detection capability. For example, non-TS required Volume Control Tank (VCT) level is monitored in the control room and can be trended via the plant process computer or manually. A total leakage calculation for RCS water inventory balance is normally performed using the plant process computer at steady state power conditions. The RCS leakage calculation program measures the inventory changes in the RCS, CVCS, and associated system drain tanks. The inventory change in the systems is converted to identified and unidentified leak rates using the time interval of the inventory measurement. The water inventory balance calculated can provide indication of a one gallon per minute leakrate change during steady state operations. Alternate leakage detection monitoring includes Volume Control Tank (VCT) level indication, containment temperature indication, containment humidity indication, and containment pressure instrumentation. These instruments provide indication in the main control room and can be trended via the plant process computer or manually. The plant process computer programs, or manual equivalents, that calculate RCS leakrates utilize parameters (e.g., VCT level, charging pump flow) in addition to those specified in the TS and provide the capability to continuously detect an increasing leakrate. Changes in the alternate leakage detection monitoring parameters may directly or indirectly indicate reactor coolant leakage to the containment atmosphere.

The containment atmosphere radiation monitors are further described in UFSAR Section 1.8, "Conformance to NRC Regulatory Guides," 5.2.5, "Detection Of Leakage Through Reactor Coolant Pressure Boundary," and 11.5, "Process, Effluent, And Airborne Radiation Monitoring Systems."

3.3 Reason for Proposed Amendments

Currently MPS2 and 3 Technical Specifications 3.4.6.1 allow continued operation of the respective facility for a limited period of time when only the gaseous radiation monitor channel is available for Reactor Coolant System (RCS) leakage detection. While these monitors continue to provide leakage detection and trending capability, improvements in nuclear fuel reliability over time have resulted in baseline RCS coolant radioactivity being reduced to a level far below that used for original design specification for these monitors. The reduction in baseline activity limits the effectiveness of the monitor relative to detecting very small leaks or very small changes in the leakrate. Under these circumstances, DNC believes it is prudent to remove credit for these monitors from the Technical Specifications. As the gaseous channels of the containment atmosphere radiation monitors at each unit are only used for RCS leakage detection, it is appropriate to also remove the gaseous channels from the radiation monitoring TS for each unit (i.e., TS 3.3.3.1, Table 3.3-6 and Table 4.3-3). Accordingly, the proposed changes would modify Technical Specification (TS) 3.3.3.1, "Radiation Monitoring," and TS 3.4.6.1, "Reactor Coolant System Leakage Detection Systems," at each unit to specifically require only one containment radioactivity monitor (particulate channel) to be operable in Modes 1, 2, 3 and 4. Additionally, corresponding changes to Surveillance Requirement 4.4.6.1 are also proposed at each unit.

Consistent with NUREG 1432, Revision 3.1, "Standard Technical Specifications Combustion Engineering Plants," TS Limiting Condition for Operation (LCO) 3.4.15, which specifies an operability requirement for "one containment atmosphere radioactivity monitor (gaseous or particulate)," MPS2 TS LCO 3.4.6.1 is also modified to clarify that only one of the two containment atmosphere particulate radioactivity monitoring channels is required to be operable in MODES 1, 2, 3, and 4. Similar clarification is included in MPS2 TS 3.4.6.1 ACTION a. regarding required actions when both containment atmosphere particulate radioactivity monitoring channels are inoperable.

4.0 TECHNICAL EVALUATION

4.1 Detailed Description

TS 3.3.3.1, Table 3.3-6 and Table 4.3-3 have been revised to remove the gaseous channels from the radiation monitoring TS.

The MPS2 and MPS3 TS 3.4.6.1 ACTION statements have been revised to include the performance of an RCS water inventory balance per SR 4.4.6.2.1 (MPS2) and SR 4.4.6.2.1.d (MPS3) with an inoperable containment sump level monitoring system or as an alternative to grab samples for inoperable containment atmosphere particulate radioactivity monitoring. A total leakage calculation for RCS water inventory balance is normally performed using the plant process computer at steady state power conditions. The RCS leakage calculation program measures the inventory changes in the RCS, CVCS, and associated system drain tanks. The inventory change in the systems is converted to identified and unidentified leak rates using the time interval of the inventory measurement. The water inventory balance calculated can provide indication of a one gallon per minute leakrate change during steady state operations. MPS2 TS ACTION b. is also revised to reflect a 30-day allowed outage time. This is consistent with NUREG 1432, Revision 3.1, TS 3.4.15, ACTION A that specifies a completion time of 30 days.

It should be noted that MPS2 and MPS3 intend to maintain the containment atmosphere gaseous radioactivity monitor functional and available in accordance with normal non-TS equipment practices.

MPS2 TS LCO 3.4.6.1 is modified to clarify that only one of the two containment atmosphere particulate radioactivity monitoring channels is required to be operable in MODES 1, 2, 3, and 4. Similar clarification is included in MPS2 TS 3.4.6.1 ACTION a. regarding required actions when both containment atmosphere particulate radioactivity monitoring channels are inoperable. This is consistent with NUREG 1432, Revision 3.1, TS Limiting Condition for Operation (LCO) 3.4.15, which specifies an operability requirement for "one containment atmosphere radioactivity monitor (gaseous or particulate."

MPS3 TS LCO 3.4.6.1 is modified to clarify the description of the sump monitoring system. No physical changes to the plant or the operation of the plant are associated with this change. RCPB leakage will continue to be detected and monitored using any of the various combinations of installed containment drains sump level and pump capacity indications. Similar clarification is included in proposed MPS3 TS 3.4.6.1 ACTIONs b. and c. regarding required actions when the containment drain sump monitoring system is inoperable.

A new ACTION c. is introduced for both MPS2 and MPS3 to address the condition where all specified monitors are inoperable. With both the Containment Atmosphere Particulate Radioactivity Monitors inoperable and the containment sump level monitoring system inoperable at MPS2, or the Containment Atmosphere Particulate Radioactivity Monitor and the Containment Drain Sump Monitoring System inoperable at MPS3, alternative action is required. Grab samples of the containment atmosphere must be taken and analyzed, a water inventory balance must be performed, and

alternate leakage detection indications monitored to ensure no increasing trend in the rate of reactor coolant system leakage. Additional diverse means of leakage detection are available as part of the overall MPS2 and MPS3 leakage detection capability. Alternate leakage detection monitoring includes Volume Control Tank (VCT) level indication (MPS2 and MPS3), containment temperature indication (MPS2 and MPS3), containment humidity indication (MPS3), containment pressure instrumentation (MPS2 and MPS3), and containment atmosphere gaseous radioactivity monitoring indication (MPS2 and MPS3). These instruments provide indication in the main control room and can be trended via the plant process computer or manually. The plant process computer programs, or manual equivalents, that calculate RCS leakrates utilize parameters (e.g., VCT level, charging pump flow) in addition to those specified in the TS and provide the capability to continuously detect an increasing leakrate. Changes in the alternate leakage detection monitoring parameters may directly or indirectly indicate reactor coolant leakage to the containment atmosphere.

For the condition where both the Containment Atmosphere Particulate Radioactivity Monitors and the containment sump level monitoring system are inoperable at MPS2, or the Containment Atmosphere Particulate Radioactivity Monitor and the Containment Drain Sump Monitoring System are inoperable at MPS3, this change will reduce the number of unnecessary MODE changes and requests for enforcement discretion by providing added flexibility in allowing a limited time to repair one or more of the inoperable monitors. A plant shut down as a result solely of a loss of TS RCS leakrate monitoring capability would be avoided. The use of alternate leakage detection monitoring for a limited time is an appropriate response to this condition.

The specified allowed outage time is acceptable, considering operating experience, the frequency and adequacy of the RCS water inventory balance, the periodic information provided by the grab samples, and the use of alternate leakage detection monitoring through diverse measurement means. The 7-day allowed outage time ensures that the plant will not be operated in a degraded configuration for a lengthy time period.

It is appropriate to also remove the gaseous channels from the radiation monitoring TS for each unit (i.e., TS 3.3.3.1, Table 3.3-6 and Table 4.3-3) since the gaseous channels of the containment atmosphere radiation monitors at each unit are only used for RCS leakage detection.

4.2 Summary

In summary, while the proposed amendment eliminates the gaseous channel from TS 3.3.3.1 and 3.4.6.1 at each unit, it results in a more restrictive requirement in the LCO for MPS3 for the containment atmosphere radioactivity monitor (i.e., the particulate channel). The proposed amendment continues to require diverse means of leakage

detection equipment with capability to promptly detect RCS leakage consistent with the MPS2 and MPS3 licensing basis.

5.0 REGULATORY EVALUATION

5.1 Applicable Regulatory Requirements

10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants," Criterion 30, "Quality of reactor coolant pressure boundary," requires that means be provided for detecting and, to the extent practical, identifying the location of the source of reactor coolant leakage. The various means for detecting reactor coolant leakage at MPS2 and MPS3 were previously discussed in Section 3.0, "Background."

The specific attributes of the reactor coolant leakage detection systems are outlined in Regulatory Positions 1 through 9 of RG 1.45. The bases of the MPS2 and MPS3 TS 3.4.1.6 identify that the identified reactor coolant system leakage detection systems are consistent with the recommendations of Regulatory Guide 1.45. It should be noted that Regulatory Position 9 specifies that the TS should include the limiting conditions for identified and unidentified leakage and address the availability of various types of instruments to assure adequate coverage at all times; however, Position 9 does not specify how many instruments shall be contained in the TS. Maintaining both the containment sump monitor and the containment atmosphere radioactivity particulate channel satisfy the RG 1.45 criteria for detecting RCS leakage. Therefore, removal of the gaseous channel of the containment radiation monitor from the TS is not in conflict with this Regulatory Position.

10 CFR 50.36, "Technical Specifications," paragraph (c)(2)(ii)(A), specifies that a TS limiting condition for operation be established for installed instrumentation that is used to detect and indicate in the control room a significant abnormal degradation of the RCPB. Currently, the instrumentation addressed in TS 3.4.6.1 satisfies this requirement. At MPS2, the current instrumentation addressed in TS 3.4.6.1 includes a containment atmosphere particulate radioactivity monitoring system, the containment sump level monitoring system, and a containment atmosphere gaseous radioactivity monitoring system. At MPS3, the current instrumentation addressed in TS 3.4.6.1 includes either the containment atmosphere gaseous or particulate radioactivity monitoring system, and the containment drain sump level or pumped capacity monitoring system. The removal of the gaseous channel of the containment atmosphere radioactivity monitor from the MPS2 and MPS3 TS is not in conflict with the 10 CFR 50.36 requirements as the containment sump monitor and the particulate channel of the containment atmosphere radioactivity monitor will remain in the TS LCO.

The proposed changes do not adversely impact the ability of the Reactor Coolant System leakage detection system to function as designed and do not impact conformance to the applicable GDCs. Therefore, the proposed changes are consistent with all applicable regulatory requirements or criteria.

Based on the considerations discussed above, (1) there is reasonable assurance the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.2 Precedent

With respect to the removal of the containment atmosphere gaseous radioactivity monitor, the NRC approved similar license amendments for South Texas Project, Units 1 and 2, (TAC Nos. MC7258 and MC7259), on October 17, 2005, and for Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2, (TAC NOS. MC0509, MC0510, MC0507, and MC0508), on January 14, 2005. However, a difference exists relative to the precedent amendments in that the proposed amendment also includes an additional action to address the condition where all specified monitors are inoperable.

5.3 Significant Hazards Consideration

DNC has evaluated whether a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92:

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

Response: No

The proposed change has been evaluated and determined to not increase the probability or consequences of an accident previously evaluated. The proposed change does not make any hardware changes and does not alter the configuration of any plant system, structure or component (SSC). The containment atmosphere gaseous radioactivity monitor is not credited for use in the initiation of any protective functions. The proposed change only removes the containment atmosphere gaseous radioactivity monitor for meeting the operability requirement for TS 3.4.6.1. Therefore, the probability of occurrence of an accident is not increased. The TS will continue to require diverse means of leakage detection equipment, thus ensuring that leakage due to cracks would continue to be identified prior to breakage and the plant shutdown accordingly. Additionally, the function of this equipment is not modeled in the MPS2 or MPS3 probabilistic risk assessment and therefore its removal from the Technical

Specifications has no impact on core damage frequency or large early release frequency. Therefore, the consequences of an accident are not increased.

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 does not involve the use or installation of new equipment and the currently installed equipment will not be operated in a new or different manner. No new or different system interactions are created and no new processes are introduced. The proposed changes will not introduce any new failure mechanisms, malfunctions, or accident initiators not already considered in the design and licensing bases. The proposed change does not affect any SSC associated with an accident initiator. Based on this evaluation, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No

The proposed change does not make any alteration to any RCS leakage detection components. The proposed change only removes the gaseous channel of the containment atmosphere radioactivity monitor for meeting the operability requirement for TS 3.4.6.1. The proposed amendment continues to require diverse means of leakage detection equipment with capability to promptly detect RCS leakage. Although not required by TS, additional diverse means of leakage detection capability are available. Based on this evaluation, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, DNC concludes that the proposed amendment involves no significant hazards consideration under the standards set forth in 10 CFR 50.92, and a finding of "no significant hazards consideration" is justified.

6.0 ENVIRONMENTAL CONSIDERATION

DNC has determined that the proposed amendment would change requirements with respect to use of a facility component located within the restricted area, as defined by 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative

occupation radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for a 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 amendment.

ATTACHMENT 2

LICENSE AMENDMENT REQUEST
(LBDCR 07-MP2-012)
REACTOR COOLANT SYSTEM LEAKAGE DETECTION SYSTEMS

MARKED-UP PAGES

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 2

TABLE 3.3-6
RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Delete					
b. Control Room Isolation	2	ALL MODES	2 mR/hr	10^{-1} - 10^{4} mR/hr	16
c. Containment High Range	1	1, 2, 3, & 4	100 R/hr	10^{0} - 10^{8} R/hr	17
2. PROCESS MONITORS					
a. Containment Atmosphere-Particulate	1	1, 2, 3, & 4	NA	10 - 10^{+6} cpm	14
b. Containment Atmosphere-Gaseous	1	1, 2, 3, & 4	NA	10 - 10^{+6} cpm	14
c. Noble Gas Effluent Monitor (high range) (Unit 2 stack)	1	1, 2, 3, & 4	2 x 10^{-1} uci/cc	10^{-3} - 10^{5} uci/cc	17

Deleted

Amendment No. 49, 100, 101, 120, 157, 245, 282, 284, 289

September 23, 2005

TABLE 4.3-3
RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
a. Deleted				
b. Control Room Isolation	S	R	M	ALL MODES
c. Containment High Range	S	R*	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Containment Atmosphere-Particulate	S	R	M	1, 2, 3, & 4
b. Containment Atmosphere-Gaseous	S	R	M	1, 2, 3, & 4
c. Noble Gas Effluent Monitor (high range) (Unit 2 Stack)	S	R	M	1, 2, 3, & 4

Deleted

* Calibration of the sensor with a radioactive source need only be performed on the lowest range. Higher ranges may be calibrated electronically.

September 20, 2004

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following Reactor Coolant System leakage detection systems shall be OPERABLE:

a. One of two containment atmosphere particulate radioactivity monitoring channels ~~system~~, and

b. The containment sump level monitoring system, and

c. A containment atmosphere gaseous radioactivity monitoring system.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Insert A

a. With one of the above radioactivity monitoring leakage detection systems inoperable, operations may continue for up to 30 days provided:

   1. The other two above required leakage detection systems are OPERABLE, and

   2. Appropriate grab samples are obtained and analyzed at least once per 24 hours;

   otherwise, be in COLD SHUTDOWN within the next 36 hours.

b. With the containment sump level monitoring system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in COLD SHUTDOWN within the next 36 hours.

SURVEILLANCE REQUIREMENTS

4.4.6.1 The leakage detection systems shall be demonstrated OPERABLE by:

a. Containment atmosphere gaseous and particulate monitoring system performance of CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST at the frequencies specified in Table 4.3-3, and

b. Containment sump level monitoring system-performance of CHANNEL CALIBRATION TEST at least once per 18 months.

Millstone Power Station Unit 2
Technical Specification 3.4.6.1
Leakage Detection Systems
Page 3/4 4-8

Insert A

a. With both of the containment atmosphere particulate radioactivity monitoring channels inoperable, operation may continue for up to 30 days provided:

    1. Appropriate grab samples of the containment atmosphere are obtained and analyzed for particulate radioactivity at least once per 24 hours, or

    2. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1 at least once per 24 hours during steady state operation.

    Otherwise, be in COLD SHUTDOWN within the next 36 hours.

b. With the containment sump level monitoring system inoperable, operation may continue for up to 30 days provided:

    1. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1 at least once per 24 hours during steady state operation.

    Otherwise, be in COLD SHUTDOWN within the next 36 hours.

c. With both of the containment atmosphere particulate radioactivity monitoring channels inoperable and the containment sump level monitoring system inoperable, operation may continue for up to 7 days provided:

    1. Appropriate grab samples of the containment atmosphere are obtained and analyzed for particulate radioactivity at least once per 24 hours, and

    2. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1 at least once per 24 hours during steady state operation, and

    3. Alternate leakage detection monitoring indicates no increasing trend in the rate of Reactor Coolant System leakage.

    Otherwise, be in COLD SHUTDOWN within the next 36 hours.

ATTACHMENT 3

LICENSE AMENDMENT REQUEST
(LBDCR 07-MP3-032)
REACTOR COOLANT SYSTEM LEAKAGE DETECTION SYSTEMS

MARKED-UP PAGES

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3

TABLE 3.3-6
RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS

FUNCTIONAL UNIT	CHANNELS TO TRIP/ALARM	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	ACTION
1. Containment					
a. Deleted					
b. RCS Leakage Detection					
1) Particulate Radioactivity	N.A.	1	1, 2, 3, 4	N.A.	29
2) Gaseous Radioactivity	N.A.	1	1, 2, 3, 4	N.A.	29
2. Fuel Storage Pool Area Monitors					
a. Radiation Level	1	2	*	≤ 15 mR/h	28

Amendment No. 46, 65, 119

June 27, 1996

TABLE 4.3-3
RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Containment				
a. Deleted				
b. RCS Leakage Detection				
1) Particulate Radioactivity	S	R	Q	1, 2, 3, 4
2) Gaseous Radioactivity	S	R	Q	1, 2, 3, 4
2. Fuel Storage Pool Area Monitors				
a. Radiation Level	S	R	Q	*

TABLE NOTATIONS

* With fuel in the fuel storage pool area.

(1)

June 27, 1996

March 16, 2006

REACTOR COOLANT SYSTEM

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following Reactor Coolant System Leakage Detection Systems shall be OPERABLE:

a. Either the Containment Atmosphere Gaseous or Particulate Radioactivity Monitoring System, and

b. The Containment Drain Sump Level or Pumped Capacity Monitoring System

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Insert B →

a. With both the Containment Atmosphere Gaseous and Particulate Radioactivity Monitors inoperable, operation may continue for up to 30 days provided the Containment Drain Sump Level or Pumped Capacity Monitoring System is OPERABLE and gaseous grab samples of the containment atmosphere are obtained at least once per 12 hours and analyzed for gross noble gas activity within the subsequent 2 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the Containment Drain Sump Level or Pumped Capacity Monitoring System inoperable, operation may continue for up to 30 days provided either the Containment Atmosphere Gaseous or Particulate Radioactivity Monitoring System is OPERABLE; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.6.1 The Leakage Detection Systems shall be demonstrated OPERABLE by:

a. Containment Atmosphere Gaseous and Particulate Radioactivity Monitoring System performance of CHANNEL CHECK, CHANNEL CALIBRATION, and ANALOG CHANNEL OPERATIONAL TEST at the frequencies specified in Table 4.3-3, and

b. Containment Drain Sump Level and Pumped Capacity Monitoring System-performance of CHANNEL CALIBRATION at least once per 24 months.

Millstone Power Station Unit 3
Technical Specification 3.4.6.1
Leakage Detection Systems
Page 3/4 4-21

Insert B

a. With the Containment Atmosphere Particulate Radioactivity Monitor inoperable, operations may continue for up to 30 days provided:

    1. Appropriate grab samples of the containment atmosphere are obtained and analyzed for particulate radioactivity at least once per 24 hours, or

    2. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1.d at least once per 24 hours during steady state operation.

    Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the Containment Drain Sump Monitoring System inoperable, operation may continue for up to 30 days provided:

    1. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1.d at least once per 24 hours during steady state operation.

    Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With the Containment Atmosphere Particulate Radioactivity Monitor inoperable and the Containment Drain Sump Monitoring System inoperable, operation may continue for up to 7 days provided:

    1. Appropriate grab samples of the containment atmosphere are obtained and analyzed for particulate radioactivity at least once per 24 hours, and

    2. A Reactor Coolant System water inventory balance is performed per SR 4.4.6.2.1.d at least once per 24 hours during steady state operation, and

    3. Alternate leakage detection monitoring indicates no increasing trend in the rate of Reactor Coolant System leakage.

    Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ATTACHMENT 4

LICENSE AMENDMENT REQUEST
(LBDCR 07-MP2-012 AND 07-MP3-032)
REACTOR COOLANT SYSTEM LEAKAGE DETECTION SYSTEMS

TECHNICAL SPECIFICATION BASES
MARKED-UP PAGES

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNITS 2 AND 3

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

3/4.4.6.1 LEAKAGE DETECTION SYSTEMS

The RCS leakage detection systems required by this specification are provided to monitor and detect leakage from the Reactor Coolant Pressure Boundary. These detection systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems."

Insert C

3/4.4.6.2 REACTOR COOLANT SYSTEM LEAKAGE

Industry experience has shown that while a limited amount of leakage is expected from the RCS, the unidentified portion of this leakage can be reduced to a threshold value of less than 1 GPM. This threshold value is sufficiently low to ensure early detection of additional leakage.

The 10 GPM IDENTIFIED LEAKAGE limitation provides allowance for a limited amount of leakage from known sources whose presence will not interfere with the detection of UNIDENTIFIED LEAKAGE by the leakage detection systems.

The steam generator tube leakage limit of 0.035 GPM per steam generator ensures that the dosage contribution from the tube leakage will be less than the limits of General Design Criteria 19 of 10CFR50 Appendix A in the event of either a steam generator tube rupture or steam line break. The 0.035 GPM limit is consistent with the assumptions used in the analysis of these accidents.

PRESSURE BOUNDARY LEAKAGE of any magnitude is unacceptable since it may be indicative of an impending gross failure of the pressure boundary. Therefore, the presence of any PRESSURE BOUNDARY LEAKAGE requires the unit to be promptly placed in COLD SHUTDOWN.

The IDENTIFIED LEAKAGE and UNIDENTIFIED LEAKAGE limits listed in LCO 3.4.6.2 only apply to the reactor coolant system pressure boundary within the containment.

In accordance with 10 CFR 50.2 "Definitions" the RCS Pressure Boundary means all those pressure-containing components such as pressure vessels, piping, pumps and valves which are (1) Part of the Reactor Coolant System, or (2) Connected to the Reactor Coolant System, up to and including any and all of the following: (i) The outermost containment isolation valve in system piping which penetrates primary reactor containment, (ii) The second of two valves normally closed in system piping which does not penetrate primary reactor containment, or (iii) The reactor coolant safety and relief valves.

The definitions for IDENTIFIED LEAKAGE and UNIDENTIFIED LEAKAGE are provided in the Technical Specifications definitions section, definitions 1.14 and 1.15 respectively.

Leakage outside of the second isolation valve for containment which is included in the RCS Leak Rate Calculation is not considered RCS leakage and can be subtracted from RCS UNIDENTIFIED LEAKAGE.

The safety significance of RCS leakage varies widely depending on its source, rate, and duration. Therefore, detecting and monitoring RCS leakage into the containment area is necessary. Quickly separating IDENTIFIED LEAKAGE from the UNIDENTIFIED LEAKAGE is necessary to provide quantitative information to the operators, allowing them to take corrective action should a leak occur. LCO 3.4.6.2 deals with protection of the reactor coolant pressure boundary from degradation and the core from inadequate cooling, in addition accident analysis radiation release assumptions from being exceeded.

Millstone Power Station Unit 2
Technical Specification Bases 3.4.6.1
Leakage Detection Systems
Page B3/4 4-3

Insert C

Additional diverse means of leakage detection are available as part of the overall leakage detection capability. Alternate leakage detection monitoring includes Volume Control Tank (VCT) level indication, containment temperature indication, containment pressure instrumentation, and containment atmosphere gaseous radioactivity monitoring indication. These instruments provide indication in the main control room and can be trended via the plant process computer or manually. While these indications are not relied upon to quantify leakage rates, changes in these parameters may indirectly indicate reactor coolant leakage to the containment atmosphere.

REACTOR COOLANT SYSTEM

BASES

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

3/4.4.6.1 LEAKAGE DETECTION SYSTEMS

The RCS Leakage Detection Systems required by this specification are provided to monitor and detect leakage from the reactor coolant pressure boundary. These Detection Systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems," May 1973.

Insert D

LCO 3.4.6.1.b. Containment Sump Drain Level or Pumped Capacity Monitoring System

The intent of LCO 3.4.6.1.b is to have a system able to monitor and detect leakage from the reactor coolant pressure boundary (RCPB). The system can use sump level, pump capacity or both as the LCO implies. It does not have to have two separate systems. The "Containment Drain Sump Level or Pumped Capacity Monitoring" System is defined as any one of the following three Systems:

Insert E

A. 3DAS-P10, Unidentified Leakage Sump Pump, and associated local and main board annunciation.

B. 3DAS-P10, Unidentified Leakage Sump Pump, and computer point 3DAS-L39 and CVLKR2.

C. 3DAS-P2A or 3DAS-P2B, Containment Drains Sump Pump, and computer points 3DAS-L22 and CVLKR2 or CVLKR31.

To meet Regulatory Guide 1.45 recommendations, the Containment Drain Sump Level or Pumped Capacity Monitoring System must meet the following five criteria:

1. Must monitor changes in sump water level, changes in flow rate or changes in the operating frequency of pumps.

2. Be able to detect an UNIDENTIFIED LEAKAGE rate of 1 gpm in less than one hour.

3. Remain OPERABLE following an Operating Basis Earthquake (OBE).

4. Provide indication and alarm in the Control Room.

5. Procedures for converting various indications to a common leakage equivalent must be available to the Operators.

The three Containment Drain Sump Level or Pumped Capacity Monitoring Systems identified above meet these five requirements as follows:

A. 3DAS-P10, Unidentified Leakage Sump Pump, and associated main board annunciation.

1. Sump level is monitored at two locations by the starting and stopping of 3DAS-P10, Unidentified Leakage Sump Pump. Flow is measured as a function of time between pump starts/stops and the known sump levels at which these occur.

Millstone Power Station Unit 3
Technical Specification Bases 3.4.6.1
Leakage Detection Systems
Page B3/4 4-4

Insert D

Additional diverse means of leakage detection are available as part of the overall leakage detection capability. Alternate leakage detection monitoring includes Volume Control Tank (VCT) level indication, containment temperature indication, containment humidity indication, containment pressure instrumentation, and containment atmosphere gaseous radioactivity monitoring indication. These instruments provide indication in the main control room and can be trended via the plant process computer or manually. While these indications are not relied upon to quantify leakage rates, changes in these parameters may indirectly indicate reactor coolant leakage to the containment atmosphere.

Insert E

Any of the following three methods may be used to meet LCO 3.4.6.1.b:

3/4.4.6.1 LEAKAGE DETECTION SYSTEMS (Continued)

2. Two timer relays in the control circuitry of 3DAS-P10 are set to identify a 1 gpm leak rate within 1 hour.

3. This monitoring system is not seismic Category I, but is expected to remain OPERABLE during an OBE. If the monitoring system is not OPERABLE following a seismic event, the appropriate ACTION according to Technical Specifications will be taken. This position has been reviewed by the NRC and documented as acceptable in the Safety Evaluation Report.

4. If the control circuitry of 3DAS-P10 identifies a 1 gpm leak rate within 1 hour, Liquid Radwaste Panel Annunciator LWS 4-5, CTMT UNIDENT LEAKAGE TROUBLE, and Main Board Annunciator MBI B 4-3, RAD LIQUID WASTE SYS TROUBLE, will alarm. These control circuits and alarms operate independently from the plant process computer.

   If the computer is inoperable, these control circuits and alarms meet the Technical Specification requirements for the Containment Drain Sump Level or Pumped Capacity Monitoring System.

5. To convert the unidentified leakage sump pump run times to a leakage rate, use the following formula:

$$\frac{(\text{3DAS-P10 run times in minutes} - [\text{number of 3DAS-P10 starts} \times .5 \text{ minutes}]) \times 20 \text{ gpm}}{\text{Elapsed monitored Time in minutes}}$$

B. 3DAS-P10, Unidentified Leakage Sump Pump, and computer points 3DAS-L39 and CVLKR2.

1. Sump level is monitored by 3DAS-LI39, the Unidentified Leakage Sump Level indicator. This level indicator provides an input to computer point 3DAS-L39.

2. The plant process computer calculates a leakage rate every 30 seconds when 3DASP10 indicates stop. This leakage rate is displayed via computer point CVLKR2. When pump P10 does run, the leakage rate calculation is stopped and resumes 10 minutes after pump P10 stops. If it cannot provide a value of the leakage rate within any 54 minute interval, CVDASPl0NC (UNDNT LKG RT NOT CALC) alarms which alerts the Operator that UNIDENTIFIED LEAKAGE cannot be determined.

3. This monitoring system is not seismic Category I, but is expected to remain OPERABLE during an OBE. If the monitoring system is not OPERABLE following a seismic event, the appropriate ACTION according to Technical Specifications will be taken.

4. A priority computer alarm (CVLKR2) is generated if the calculated leakage rate is greater than a value specified on the Priority Alarm Point Log. This alarm value should be set to alert the Operators to a possible RCS leak rate in excess of the Technical Specification maximum allowed UNIDENTIFIED LEAKAGE. The alarm