NMC
Committed to Nuclear Excellence

Monticello Nuclear Generating Plant
Operated by Nuclear Management Company, LLC

December 23, 2003

L-MT-03-091
10 CFR Part 50
Section 50.90

US Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket 50-263
License No. DPR-22

License Amendment Request For Technical Specification Tables 3.2.1 and 3.2.4

Pursuant to 10 CFR 50.90, the Nuclear Management Company, LLC (NMC) hereby requests the following amendment: The proposed changes would revise Monticello Nuclear Generating Plant (MNGP) Technical Specifications (TS) to eliminate the Reactor Head Cooling containment isolation function, since the Reactor Head Cooling system has been removed from service. In addition, the MNGP TS are being changed to correct and clarify existing requirements, make wording enhancements, and revise an existing limiting condition for operation (LCO) for radiation monitors used to isolate Reactor Building Ventilation and initiate the Standby Gas Treatment System.

NMC requests approval of the proposed amendment by December 2004. Once approved, the amendment shall be implemented within 60 days.

This letter contains no new commitments and no revisions to existing commitments.

The Monticello Operations Committee has reviewed this application. A copy of this submittal, including the Determination of No Significant Hazards Consideration, is being forwarded to our appointed state official pursuant to 10 CFR 50.91(b)(1).

If you have any questions or require additional information, please contact John Fields, Senior Licensing Engineer, at (763) 295-1663.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 23, 2003

Thomas J. Palmisano
Site Vice President, Monticello Nuclear Generating Plant
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A001

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Enclosures (4)

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NRR Project Manager, NRC
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Minnesota Department of Commerce

ENCLOSURE A

LICENSEE'S EVALUATION OF PROPOSED CHANGES

1.0 Description

This letter is a request to amend Operating License DPR-22 for Monticello Nuclear Generating Plant (MNGP).

The proposed changes would revise Monticello Nuclear Generating Plant (MNGP) Technical Specifications (TS) to eliminate the Reactor Head Cooling containment isolation function, since the Reactor Head Cooling system has been removed from service. In addition, the MNGP TS are being changed to correct and clarify existing requirements, make wording enhancements, and revise an existing limiting condition for operation (LCO) for radiation monitors used to isolate Reactor Building Ventilation and initiate the Standby Gas Treatment System.

2.0 Proposed Change

2.1 Changes to TS Table 3.2.1

The Reactor Head Cooling line and associated isolation valves are to be removed from the MNGP facility. Accordingly the proposed change would remove from TS Table 3.2.1, Function 2, the Group 2 Isolation function for the Head Cooling line. In addition, note "C" associated with Table 3.2.1 will be modified to remove reference to the "Reactor Head Cooling Line" isolation valves.

The TS bases, which discuss the Reactor Head Cooling function, are also being eliminated in accordance with the NMC TS Bases Control Program for MNGP. These changes are provided for information and completeness.

2.2 Changes to TS Table 3.2.4

The changes to TS Table 3.2.4 are proposed to correct and clarify the description of the number of instrument channels per trip system as defined in the MNGP TS:

(a) This change revises Table 3.2.4 "Instrumentation that initiates Reactor Building Ventilation Isolation And Standby Gas Treatment" to add a column entitled *"Minimum No. Operable or Operating Trip Systems."* This change is being made to make this table consistent with other MNGP instrumentation TS tables and to clarify the system configuration. Each function is required to have a minimum of two trip systems operable.

(b) This change modifies the *"Total No. of Instrument Channels Per Trip System"* from one to two for Function 3 – Reactor Building Plenum Radiation Monitors and for Function 4 – Refueling Floor Radiation Monitors.

With these revisions the MNGP TS Bases will be modified in accordance with the NMC TS Bases Control Program for MNGP to indicate that these functions have shared monitors that function in both trip systems.

(c) This change modifies the *"Min. No. of Operable or Operating Instrument Channels Per Trip System"* from one to two for Function 3 – Reactor Building Plenum Radiation Monitors and for Function 4 – Refueling Floor Radiation Monitors.

(d) Note 1 of TS Table 3.2.4 is modified to remove reference to "one instrument channel per trip system," since this situation does not exist on Table 3.2.4. Note 1 was further revised to add the current contents of Note 6, since this note now applies to all the channels on this table.

(e) The current Notes 2 and 5 of TS Table 3.2.4 are combined to form new LCO conditions for the instruments on this table. References to Note 2 are added for each Function and references to Note 5 are deleted. Note 2 is further modified to reflect the configuration and capability differences between Functions 1 and 2 and Functions 3 and 4. Further subsections are added to Note 2 to provide optional actions to perform upon loss of any function.

(f) The current Note 4 is deleted. This note was only applicable to single train instrument channels. References to Note 4 throughout the table were also deleted.

(g) Note 6 was relocated to Note 1 and references to Note 6 have been deleted.

3.0 Background

3.1 TS Table 3.2.1

The purpose of MNGP TS Table 3.2.1 is to identify instrumentation that initiates primary containment isolation functions. The table is sorted by Function, which corresponds to isolation group. Function 2 is being revised which corresponds to the Group 2 isolations. This change also results in note C being revised to eliminate reference to the Reactor Head Cooling Line.

The Group 2 isolation function is performed whenever any one of the following conditions exists:

- Reactor Low Water Level
- High Drywell Pressure

A low water level in the reactor vessel could indicate that reactor coolant is

being lost through a breach in the nuclear system process barrier and that the core is in danger of becoming overheated as the reactor coolant inventory diminishes. The Group 2 low water level setting, which is the same as the reactor vessel low water level scram setting, was selected to initiate isolation at the earliest indication of a possible breach in the nuclear system process barrier yet far enough below normal operational levels to avoid an inadvertent isolation.

High pressure in the drywell could indicate a breach of the nuclear system barriers inside the drywell. The automatic closure of various valves of Groups 2 and 3 prevents the release of significant amounts of radioactive material from the Primary Containment. The Residual Heat Removal (RHR) system is one of the systems isolated by a Group 2 isolation.

The RHR system performs many functions in the plant. Shutdown Cooling is one of these functions. Its purpose is to remove decay heat and sensible heat from the reactor primary system to support normal refueling and service operation. This is considered a non-safety related function. Reactor Head Cooling was originally considered a subsystem of RHR under the Shutdown Cooling function.

The purpose of the Reactor Head Cooling subsystem was to take a portion of the shutdown cooling flow and divert it to a spray nozzle in the reactor head. This spray maintained saturated conditions in the reactor vessel head volume by condensing steam being generated by the hot reactor vessel walls and internals. This ensured that the water level in the reactor vessel could rise. The higher water level provided conduction cooling to more of the mass of metal of the reactor vessel and therefore limited thermal stress in the reactor vessel during cool down.

However, in late 2001, incidents attributed to accumulation and detonation of radiolytic hydrogen caused piping ruptures to occur in two separate international Boiling Water Reactors (BWRs). General Electric (GE) SIL 643 outlines the probability of a radiolytic gas detonation at a GE designed BWR based on detonations in Germany and Japan. A Task Force convened by GE Nuclear Energy concluded that the probability of similar events in GE BWRs cannot be completely precluded, particularly in the case of degraded component performance that may not be immediately recognizable.

NMC evaluated the Reactor Head Cooling piping that might pose a detonation threat and concluded that the piping had the potential for hydrogen accumulation and subsequent detonation. NMC performed a plant modification in 2002 to remove a spool piece in the Reactor Head Cooling system and to cap it to alleviate the detonation concerns. This proposed change to the TS would remove the containment isolation valves function from the TS and provide for removal of the system, as it no longer communicates with the reactor vessel.

3.2 TS Table 3.2.4

The purpose of MNGP TS Table 3.2.4 is to identify instrumentation that initiates Reactor Building Ventilation Isolation and Standby Gas Treatment System (SGTS) Initiation functions. The table is sorted by four sets of instruments that perform the function. The entire table is being revised due to deficiencies discovered in the system configuration information.

The SGTS is provided to maintain, whenever secondary containment isolation conditions exist, a small negative pressure to minimize ground level escape of airborne radioactivity. Filters are provided in the system to remove radioactive particulates, and charcoal adsorbers are provided to remove radioactive halogens. All flow from the SGTS is released through the elevated off-gas vent stack and continuously monitored by the stack gas monitoring system. The SGTS is initiated via primary containment isolation logic due to Low-Low Reactor Water Level or High Drywell Pressure or via the Reactor Building Plenum Radiation Monitors or Refueling Floor Radiation Monitors.

The Low-Low Reactor Water Level and High Drywell Pressure are part of the Emergency Core Cooling System (ECCS) and have two independent trip systems that are required to be operable. Low-Low Reactor Water Level and High Drywell Pressure are each detected by four independent level or pressure switches connected in a one out of two twice logic array. The Low-Low Reactor Water Level signal or the High Drywell Pressure signal initiate the start of the Emergency Diesel Generators, trip the recirculation pumps, initiate HPCI and LPCI systems and initiate other protective actions.

Low-Low Reactor Water Level and High Drywell Pressure parameters are part of the Primary Containment Isolation System (PCIS) and have two independent trip systems that are required to be operable. The Low-Low Reactor Water Level signal actuates a Group 3 isolation and the High Drywell Pressure signal actuates both a Group 2 and Group 3 isolation.

The Reactor Building Plenum Radiation Monitoring subsystem measures the radioactivity in the combined exhaust from the Reactor Building, Radwaste Building, Turbine Building, Recombiner Building and Chemistry Laboratory ventilation systems. Provision is made for indication and recording in the Main Control Room and for automatic alarm when radioactivity reaches prescribed levels. Two monitoring channels are provided for the Reactor Building Ventilation Plenum. These channels share power supplies with the Fuel Pool Radiation Monitors. Each channel provides a trip on high radiation level and low radiation level. The low radiation level is indicative of instrument trouble. The trip outputs from the two monitoring channels are combined such that one upscale trip or two downscale trips initiate reactor building ventilation system

shutdown and startup of the SGTS and closure of select Group 2 primary containment valves. One downscale trip initiates an alarm only.

The Fuel Pool Radiation Monitor subsystem indicates the radioactivity levels at the operating floor in the vicinity of the Fuel Pool and the Reactor Pool Cavity. Two channels are provided. Power supplies for these units are shared with the Reactor Building Plenum Radiation Monitors in order to provide redundancy. Each channel provides a trip on high radiation level and low radiation level. The low radiation level is indicative of instrument trouble. The trip outputs from the two monitoring channels are combined such that one upscale trip or two downscale trips initiate reactor building ventilation system shutdown, startup of the SGTS and closure of select Group 2 primary containment isolation valves. One downscale trip initiates an alarm only.

It was determined that the current TS indicated that only one instrument channel per trip system existed for the Reactor Building Plenum Radiation Monitors and Refueling Floor Radiation Monitors. While it is true that there are two trip systems and only two monitors, each monitor (instrument channel) is shared by both trip systems, in effect creating a configuration where there are two instrument channels per trip system.

4.0 Technical Analysis

4.1 Revision of TS Table 3.2.1

This proposed change to the TS would remove the containment isolation function for the Reactor Head Cooling Containment Isolation Valves. The Reactor Head Cooling function is non-safety related and the industry has determined that this system may potentially cause a hazard to the facility. Therefore, NMC finds the proposed change acceptable because the piping lines are to be removed from the plant and a cap will be welded on the pipe end of the primary containment penetration.

No changes to other Group 2 isolation valves or to the Group 2 isolation signal development or logic will be performed as part of this TS change, only the Reactor Head Cooling containment isolation valves and associated piping will be removed.

4.2 Revision of TS Table 3.2.4

(a) This change revises Table 3.2.4 "Instrumentation that initiates Reactor Building Ventilation Isolation And Standby Gas Treatment" to add a column entitled *"Minimum No. Operable or Operating Trip Systems."*

This change simply reflects the configuration of each trip system and states how many are required to be operable. The Reactor Building Ventilation Isolation and Standby Gas Treatment Initiation signal is developed using two logic trains or trip systems. Each of the functions in table 3.2.4 feeds into the trip systems as indicated in section 3.2. This change is acceptable because it is being made to make this table consistent with other MNGP TS instrumentation tables and to clarify the system configuration.

(b) This change modifies the *"Total No. of Instrument Channels Per Trip System"* from one to two for Function 3 – Reactor Building Plenum Radiation Monitors and for Function 4 – Refueling Floor Radiation Monitors. With these revisions the MNGP TS Bases will be modified in accordance with the NMC TS Bases Control Program for MNGP to indicate that these functions have shared monitors that function in both trip systems respectively.

As indicated in section 3.2 each of the TS table functions is monitored by two radiation monitors (instrument channels). However, each of the monitors is shared by the redundant trip systems of the function, in effect creating a configuration of two instrument channels per trip system. This is acceptable because the design bases of these functions permits this configuration of the monitors. The monitor functions as described in section 3.2 provide assurance that protective actions will be initiated in the event of high radiation levels (upscale trip). In addition, downscale trips will be annunciated (for one channel) or actuated (for two channels) in the event of monitor failure. The note addressing the shared nature of the channels is acceptable as it simply documents the unique configuration of these instrument channels as compared to the other instrument channels in this table.

(c) This change modifies the *"Min. No. of Operable or Operating Instrument Channels Per Trip System"* from one to two for Function 3 – Reactor Building Plenum Radiation Monitors and for Function 4 – Refueling Floor Radiation Monitors.

As indicated in section 3.2, each of the TS table functions is monitored by two radiation monitors (instrument channels). However, each of the monitors is shared by the redundant trip systems of the function, in effect creating a configuration of two instrument channels per trip system. This is acceptable because with the previous TS construction it was possible to

have one instrument channel out of service indefinitely. This TS construction requires that each monitor be available and operable to perform its design function.

(d) Note (1) of TS Table 3.2.4 is modified to remove reference to "one instrument channel per trip system," since this situation does not exist on Table 3.2.4. Note (1) was further revised to add the current contents of Note (6), since this note now applies to all the channels on this table.

The reference to "one instrument channel per trip system" is no longer applicable with the changes discussed in (c) discussed above. Each train has two instrument channels per trip system. The contents of note (6) were relocated with slight modification to note (1) since this note now applies to all the TS functions on this table. With two instrument channels available per trip system, the parameter will continue to be monitored while the opposite instrument channel is out for any required surveillance testing.

These changes are acceptable since the TS must require both instrument channels per trip system to be operable at all times. This is consistent with other MNGP TS sections and industry standards such as NUREG-1433 (Ref. 3). The allowance that a particular channel may be inoperable for up to six hours during surveillance activities while the redundant instrument channel is available to monitor the given parameter is also acceptable because it is consistent with other TS sections and GE Topical Report NEDC-31677P-A (Ref. 1). In approval of GE Topical Report NEDC-31677P-A by the NRC, the allowed out-of-service times (AOTs) for isolation/actuation instrumentation for surveillance test performance was modified from two to six hours. These AOTs for surveillance performance have become generally accepted industry practices and are incorporated in industry standard TS today (NUREG-1433 (Ref. 3)).

(e) The current Notes 2 and 5 of TS Table 3.2.4 are combined to form new LCO conditions for the instruments on this table. References to Note (2) are added for each Function and references to Note (5) are deleted. Note (2) is further modified to reflect the configuration and capability differences between Functions 1 and 2 and Functions 3 and 4. Further subsections are added to Note (2) to provide optional actions to perform upon loss of any function.

The current TS for Table 3.2.4 Notes (2) and (5) have the identical entry conditions (i.e., both read *"Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied action shall be initiated..."*). The only difference is the actions initiated. Note (2) is applied to a single instrument channel per trip system and note (5) is applied to two instrument channels per trip system. These notes are being combined since no single instrument channel for each trip

system exists as discussed in section (b) above. Each function is now referenced to note (2) and references to note (5) are deleted. This change is acceptable since no actual change to the TS is occurring only a relocation of information with minor grammatical changes and a change in referencing of the notes is taking place. This is an administrative change.

The revision to TS Table 3.2.4 note (2)a provides separate time requirements to place the associated function instrument channel or trip system in the tripped condition when one instrument channel per trip system is inoperable. For functions 1 and 2 the instrument channel or trip system must be placed in the tripped condition within 12 hours. This is not changed from the currently approved TS in note 5a and is consistent with the GE Topical Report NEDC 30851P-A, Supplement 2 (Ref. 2).

For TS Table 3.2.4 Functions 3 and 4, changes to note (2)a are needed to provide a 24-hour time period for operation with one radiation monitor channel inoperable, and to provide an action statement for what to do if the requirement cannot be met. These changes are acceptable because they are consistent with other TS sections and GE Topical Report NEDC-31677P-A (Ref. 1). In approval of GE Topical Report NEDC-31677P-A by the NRC the allowed out-of-service times (AOTs) for isolation/actuation instrumentation for maintenance activities was modified from one to 24 hours. These AOTs for maintenance activities have become generally accepted industry practices and are incorporated in industry standard TS today (NUREG-1433 (Ref. 3)).

Due to the shared nature of the radiation monitors for Functions 3 and 4, placing a single channel in a upscale tripped condition would actuate both secondary containment logic trains and initiate a secondary containment isolation. Therefore, note (2)(a) 2) has been modified to place the channel in a "downscale trip condition". This permits a channel to be placed in a tripped condition, while the redundant channel is still fully functional and capable of detecting a high radiation condition. If the redundant operable monitor were to detect a high radiation condition (upscale trip) or if the redundant operable monitor were to fail (downscale trip) the logic system would initiate a secondary containment isolation signal as designed. This change is acceptable since it mimics the changes made to standard TS made by NEDC-31677P-A (Ref. 1). In NEDC-31677P-A the TS are altered to include the following verbiage: *"Place one trip system (with the most inoperable channels) in the tripped condition. The trip system need not be placed in the tripped condition when this would cause the isolation to occur."* In keeping with this approach, the MNGP will place the single inoperable channel (with the highest number of inoperable channels) in a tripped condition (downscale trip), but will not cause the isolation (Secondary Containment) to occur.

The revision to TS Table 3.2.4 note (2) b provides separate actions to be performed when more than one instrument channel per trip system is inoperable. For functions 1 and 2 the instrument channel or trip system must be immediately placed in the tripped condition. This is not changed from the currently approved TS in note 5b and is consistent with the GE Topical Report NEDC 30851P-A, Supplement 2 (Ref. 2). The only change is to add the specific requirement for functions 1 and 2. This change is acceptable because it is administrative only.

For TS Table 3.2.4 functions 3 and 4 changes to note (2) b are needed to provide for immediate action due to a loss of the capability to detect a failure. With the shared configuration of the radiation monitors (Reactor Building Plenum Radiation Monitor, or Refueling Floor Radiation Monitor) a failure of two monitors in one function renders the ability to actuate both trip systems inoperable. Therefore, the TS note requires the operator to immediately proceed to take the actions described in note 2(c), which requires isolation of reactor building ventilation, initiation of standby gas treatment or establishment of conditions where secondary containment is not required. This is acceptable because any failure of both the monitoring channels for any function requires immediate action. These TS conservatively direct the operator to compensate for the inability to detect a failure for functions 3 or 4.

The revision to TS Table 3.2.4 note 2c provides action statements to take when the conditions of note 2a and 2b cannot be met (or as directed by note (2)b2)). This is not changed from the currently approved TS in note (5)c. Revising this note is acceptable because the change is administrative in nature and does not change the method of required actions as defined in the current TS.

(f) The current Note 4 is deleted. This note was only applicable to single train instrument channels. References to Note 4 throughout the table were also deleted.

Note 4 was deleted because it was only applicable to a single train instrument channel used in conjunction with two trip systems. As described in section (b) above, the TS are being changed to indicate the existence of two shared instrument channels that work with two trip systems. Deletion of references to note 4 is acceptable since the note no longer exists.

(g) Note 6 was relocated to Note 1 and references to Note 6 have been deleted.

Note 6 was incorporated into Note 1 as described in section (d) above. Deletion of references to note 6 is acceptable since the note no longer exists and each function is now referenced to Note 1 where the text of the previous note 6 is contained.

The restructuring and rewording of TS Table 3.2.4 is acceptable because it will enhance the current TS requirements by adding an additional LCO, which places a specified time limit on inoperability of one Reactor Building Plenum Radiation Monitor, or one Refueling Floor Radiation Monitor. Additionally, the clarification of TS requirements makes the section more easily understood, which will help to prevent errors and provide more detailed instructions. The changes are consistent with GE Topical Report NEDC-31677-P (Ref. 1). The Safety Evaluation was reviewed by NMC, and it was concluded that the generic analysis applies to MNGP.

5.0 Regulatory Safety Analysis

5.1 No Significant Hazards Consideration

The proposed changes would revise Monticello Nuclear Generating Plant (MNGP) Technical Specifications (TS) to eliminate the Reactor Head Cooling containment isolation function, since the Reactor Head Cooling system has been removed from service. In addition, the MNGP TS are being changed to correct and clarify existing requirements, make wording enhancements, and revise an existing limiting condition for operation (LCO) for radiation monitors used to isolate Reactor Building Ventilation and initiate the Standby Gas Treatment System (SGTS).

Nuclear Management Company, LLC has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No.

One of the proposed changes removes the Reactor Head Cooling system primary containment isolation signal from the TS. The existing piping will be removed and the existing process pipe through the containment penetration will be cut and capped. This equipment was only used for the shutdown-cooling (non-safety related) mode of operation. This system does not support safe shutdown of the facility. The proposed TS change does not introduce new equipment or new equipment operating modes, nor does the proposed change alter existing system relationships. These proposed changes do not increase the likelihood of the malfunction of any structure, system or

component (SSC) or impact any analyzed accident. Consequently, the probability of an accident previously evaluated is not increased.

The other proposed change adds an allowable outage time to the radiation monitors described in TS that initiate the SGTS and adds a time requirement for placing inoperable channels in a tripped condition. The proposed TS change does not introduce new equipment or new equipment operating modes, nor does the proposed change alter existing system relationships. The change does not affect plant operation, design function or any analysis that verifies the capability of a SSC to perform a design function. Further, the proposed change does not increase the likelihood of the malfunction of any structure, system or component (SSC) or impact any analyzed accident. Consequently, the probability of an accident previously evaluated is not affected.

Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

One of the proposed changes removes the Reactor Head Cooling system primary containment isolation signal from the TS. The existing piping will be removed and the existing process pipe through the containment penetration will be cut and capped. This equipment was only used for the shutdown-cooling (non-safety related) mode of operation. The change does not create the possibility of new credible failure mechanisms, or malfunctions. The proposed change does not introduce new accident initiators. Consequently, the changes cannot create the possibility of a new or different kind of accident from any accident previously evaluated.

The other proposed change adds an allowable outage time to the radiation monitors described in TS that initiate the SGTS and adds a time requirement for placing inoperable channels in a tripped condition. This change does not modify the design function or operation of any SSC. Further the change does not involve physical alterations of the plant; no new or different type of equipment will be installed. The proposed change is not an indicator of any accident previously evaluated. Consequently, the probability of an accident

previously evaluated is not affected.

Therefore, the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

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

One of the proposed changes removes the Reactor Head Cooling system primary containment isolation signal from the TS. The existing piping will be removed and the existing process pipe through the containment penetration will be cut and capped. This equipment was only used for the shutdown-cooling (non-safety related) mode of operation. This system does not support safe shutdown of the facility. This change does not exceed or alter a design basis or a safety limit for a parameter established in the MNGP Updated Safety Analysis Report (USAR) or the MNGP facility license. Consequently, the change does not result in a significant reduction in the margin of safety.

The other proposed change adds an allowable outage time to the radiation monitors described in TS that initiate the SGTS and adds a time requirement for placing inoperable channels in a tripped condition. This change ensures continued compliance with regulatory and licensing requirements. The change does not exceed or alter a design basis or safety limit for a parameter established in the MNGP USAR or MNGP facility license. Consequently, the proposed amendment does not involve a significant reduction in the margin of safety.

Therefore, the proposed amendment does not involve a significant reduction in the margin of safety.

Based on the above, NMC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

10CFR50.36 requires that technical specification limiting conditions for operation of a nuclear reactor must be established for installed instrumentation that is used to detect, and indicate in the control room, a

significant abnormal degradation of the reactor coolant pressure boundary. In addition, 10CFR50.36 requires that surveillances relating to test, calibration, or inspection be completed to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The proposed changes would revise the TS Table 3.2.1 to eliminate the head cooling containment isolation function and Table 3.2.4 to clarify existing requirements, make wording enhancements, and revise an existing limiting condition for operation (LCO). Each of the changes as evaluated above has been demonstrated to be in accordance with NRC regulations and approved by NRC for use by licensees.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that 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.

6.0 Environmental Consideration

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve:

(i) a significant hazards consideration,
The proposed amendment does not involve a significant hazard as evaluated previously in section 5.1.

(ii) a significant change in the type or significant increase in the amounts of any effluent that may be released offsite, or
The proposed amendment is consistent with and does not change the design basis of the plant. The proposed amendment will not result in an increase in power level, will not increase the production of radioactive waste and byproducts, and will not alter the flowpath or method of disposal of radioactive waste or byproducts. Therefore, the proposed amendment does not involve any change in the type or amount of any effluent that may be released offsite.

(iii) a significant increase in individual or cumulative occupational radiation exposure.
The proposed amendment does not result in changes in the level of control or methodology used for processing radioactive effluents or handling of solid radioactive waste. There will be no change to the normal radiation levels within

the plant. Therefore, the amendment does not involve an increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment 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 amendment.

7.0 References

1. General Electric (GE) Topical Report NEDC-31677P-A, Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation, July 1990.

2. General Electric (GE) Topical Report NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analysis For BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," March 1989.

3. NUREG-1433, Revision 2, "Standard Technical Specifications General Electric Plants, BWR/4, April 2001.

ENCLOSURE B

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

This enclosure consists of current Technical Specification pages marked up with the proposed changes. The pages included in this exhibit are as listed below:

Pages
49
51a
59
59a

Table 3.2.1 Instrumentation That Initiates Primary Containment Isolation Functions				
Function	Trip Settings	Total No. of Instrument Channels Per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System (1, 2)	Required Conditions*
1. Main Steam and Recirc Sample Line (Group 1)				
a. Low Low Reactor Water Level	≥-48"	2	2	A
b. High Flow In Main Steam Line	≤140% rated	8	8	A
c. High temp. in Main Steam Line Tunnel	≤200°F	8	2 of 4 in each of 2 sets	A
d. Low Pressure in Main Steam Line (3)	≥825 psig	2	2	B
2. RHR System, ~~Head Cooling,~~ Drywell, Sump, TIP (Group 2)				
a. Low Reactor Water Level	≥7"	2	2	C

NOTES: (Continued)

* Required conditions when minimum conditions for operation are not satisfied.

A. Group 1 isolation valves closed.
B. Reactor Power on IRM range or below and reactor in startup, refuel, or shutdown mode.
C. Isolation Valves closed for: Shutdown Cooling System~~, and Reactor Head Cooling Line~~.
D. Comply with Condition C. above.
E. Isolation Valves closed for: Reactor Cleanup System.
F. HPCI steam line isolated. (See specification 3.5 for additional requirements.)
G. RCIC steam line isolated.

** Function changed from Low Reactor Water Level to Low Low Reactor Water Level following completion of design change.

*** Function changed from ≤150,000 lb/hr, ≤60 second delay, and ≤300,000 lb/hr, instantaneous, isolation to ≤300/000 lb/hr, ≤7 second delay, isolation following completion of design change.

Table 3.2.4 Instrumentation That Initiates Reactor Building Ventilation Isolation And Standby Gas Treatment System Initiation					
Function	Trip Settings	**Minimum No. of Operable or Operating Trip Systems**	Total No. of Instrument Channels Per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System	Required Conditions*
1. Low Low Reactor Water Level	~~≥48"~~	**2**	2	2 (Notes 1, **2,** 3 ~~, 5, 6~~)	A. or B.
2. High Drywell Pressure	≤2 psig	**2**	2	2 (Notes 1, **2,** 3 ~~, 5, 6~~)	A. or B.
3. Reactor Building Plenum Radiation Monitors	≤100 mR/hr	**2**	~~1~~**2**	~~1~~**2** (Notes 1, 2 ~~, 4~~)	A. or B.
4. Refueling Floor Radiation Monitors	≤100 mR/hr	**2**	~~1~~**2**	~~1~~**2** (Notes 1, 2 ~~, 4~~)	A. or B.

Notes:

(1) There shall be two operable or tripped Trip Systems for each function. **An Instrument Channel may be placed in an inoperable status for up to 6 hours for performance of required surveillances without placing the Trip System in the tripped condition provided that at least one other OPERABLE Channel in the same Trip System is monitoring that parameter.** ~~with two instrument channels per trip system and there shall be one operable or tripped trip system for each function with one instrument channel per trip system.~~

(2) Upon discovery that minimum requirements for the number of operable or operating Trip Systems or Instrument Channels are not satisfied action shall be initiated ~~to~~ **as follows:**

(a) ~~Satisfy the requirements by placing appropriate channels or systems in the tripped condition, or~~ **With one Instrument Channel per Trip System inoperable:**

1) For Functions 1 or 2, place the inoperable Channel or Trip System in the tripped condition within 12 hours

2) For Functions 3 or 4, place the inoperable Channel in a downscale trip condition, or place the Trip System in the tripped condition within 24 hours

-- OR --

Notes: (cont'd)

~~(b) Place the plant under the specified required conditions using normal operating procedures.~~

(b) With more than one Instrument Channel per Trip System inoperable:

1) For Functions 1 or 2, immediately satisfy the requirements by placing the appropriate Channels or Trip Systems in the tripped condition,

2) For Functions 3 or 4, immediately proceed to Note 2c

-- OR --

(c) If (a) or (b) cannot be met, then place the plant under the specified required conditions using normal operating procedures.

(3) Need not be operable when primary containment integrity is not required.

~~(4) One of the two monitors may be bypassed for maintenance and/or testing.~~

~~(5) Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied action shall be initiated as follows:~~

~~(a) With one required instrument channel inoperable per trip function, place the inoperable channel or trip system in the tripped condition within 12 hours, or~~

~~(b) With more than one instrument channel per trip system inoperable, immediately satisfy the requirements by placing appropriate channels or systems in the tripped condition, or~~

~~(c) Place the plant under the specified required conditions using normal operating procedures.~~

~~(6) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided that at least one other OPERABLE channel in the same trip system is monitoring that parameter.~~

* Required Conditions when minimum conditions for operation are not satisfied.

A. The reactor building ventilation system isolated and the standby gas treatment system operating.

B. Establish conditions where secondary containment is not required.

ENCLOSURE C

PROPOSED TECHNICAL SPECIFICATION CHANGES (RETYPED)

This enclosure consists of revised Technical Specification pages that incorporate the proposed changes. The pages included in this exhibit are as listed below:

Pages
49
51a
59
59a

Table 3.2.1 Instrumentation That Initiates Primary Containment Isolation Functions				
Function	Trip Settings	Total No. of Instrument Channels Per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System (1, 2)	Required Conditions*
1. Main Steam and Recirc Sample Line (Group 1)				
a. Low Low Reactor Water Level	≥-48"	2	2	A
b. High Flow In Main Steam Line	≤140% rated	8	8	A
c. High temp. in Main Steam Line Tunnel	≤200°F	8	2 of 4 in each of 2 sets	A
d. Low Pressure in Main Steam Line (3)	≥825 psig	2	2	B
2. RHR System, Drywell, Sump, TIP (Group 2)				
a. Low Reactor Water Level	≥7"	2	2	C

NOTES: (Continued)

* Required conditions when minimum conditions for operation are not satisfied.

A. Group 1 isolation valves closed.
B. Reactor Power on IRM range or below and reactor in startup, refuel, or shutdown mode.
C. Isolation Valves closed for: Shutdown Cooling System.
D. Comply with Condition C. above.
E. Isolation Valves closed for: Reactor Cleanup System.
F. HPCI steam line isolated. (See specification 3.5 for additional requirements.)
G. RCIC steam line isolated.

** Function changed from Low Reactor Water Level to Low Low Reactor Water Level following completion of design change.

*** Function changed from ≤150,000 lb/hr, ≤60 second delay, and ≤300,000 lb/hr, instantaneous, isolation to ≤300/000 lb/hr, ≤7 second delay, isolation following completion of design change.

Table 3.2.4
Instrumentation That Initiates Reactor Building Ventilation Isolation
And Standby Gas Treatment System Initiation

Function	Trip Settings	Minimum No. of Operable or Operating Trip Systems	Total No. of Instrument Channels Per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System	Required Conditions*
1. Low Low Reactor Water Level	≥ -48"	2	2	2 (Notes 1, 2, 3)	A. or B.
2. High Drywell Pressure	≤2 psig	2	2	2 (Notes 1, 2, 3)	A. or B.
3. Reactor Building Plenum Radiation Monitors	≤100 mR/hr	2	2	2 (Notes 1, 2)	A. or B.
4. Refueling Floor Radiation Monitors	≤100 mR/hr	2	2	2 (Notes 1, 2)	A. or B.

Notes:

(1) There shall be two operable or tripped Trip Systems for each function. An Instrument Channel may be placed in an inoperable status for up to 6 hours for performance of required surveillances without placing the Trip System in the tripped condition provided that at least one other OPERABLE Channel in the same Trip System is monitoring that parameter.

(2) Upon discovery that minimum requirements for the number of operable or operating Trip Systems or Instrument Channels are not satisfied action shall be initiated as follows:

(a) With one Instrument Channel per Trip System inoperable:

1) For Functions 1 or 2, place the inoperable Channel or Trip System in the tripped condition within 12 hours

2) For Functions 3 or 4, place the inoperable Channel in a downscale trip condition, or place the Trip System in the tripped condition within 24 hours

-- OR --

Notes: (cont'd)

(b) With more than one Instrument Channel per Trip System inoperable:

1) For Functions 1 or 2, immediately satisfy the requirements by placing the appropriate Channels or Trip Systems in the tripped condition,

2) For Functions 3 or 4, immediately proceed to Note 2c

-- OR --

(c) If (a) or (b) cannot be met, then place the plant under the specified required conditions using normal operating procedures.

(3) Need not be operable when primary containment integrity is not required.

* Required Conditions when minimum conditions for operation are not satisfied.

A. The reactor building ventilation system isolated and the standby gas treatment system operating.

B. Establish conditions where secondary containment is not required.

ENCLOSURE D

CHANGES TO TECHNICAL SPECIFICATION BASES PAGES

This enclosure consists of revised Technical Specification Bases pages that incorporate the proposed changes. These pages are provided for Information only.

The pages included in this enclosure are as listed below:

Pages
64
68

Bases 3.2:

In addition to reactor protection instrumentation which initiates a reactor scram, protective instrumentation has been provided which initiates action to mitigate the consequences of accidents which are beyond the operators ability to control, or terminate a single operator error before it results in serious consequences. This set of specifications provides the limiting conditions of operation for the primary system isolation function, initiation of the emergency core cooling system, and other safety related functions. The objectives of the Specifications are (i) to assure the effectiveness of the protective instrumentation when required, and (ii) to prescribe the trip settings required to assure adequate performance. This set of Specifications also provides the limiting conditions of operation for the control rod block system.

Isolation valves are installed in those lines that penetrate the primary containment and must be isolated during a loss of coolant accident so that the radiation dose limits are not exceeded during an accident condition. Actuation of these valves is initiated by protective instrumentation shown in Table 3.2.1 which senses the conditions for which isolation is required. Such instrumentation must be available whenever primary containment integrity is required. The objective is to isolate the primary containment so that the guidelines of 10 CFR 100 are not exceeded during an accident.

The instrumentation which initiates primary system isolation is connected in a dual bus arrangement. Thus, the discussion given in the bases for Specification 3.1 is applicable here.

The low reactor water level instrumentation is set to trip when reactor water level is >7" on the instrument. This corresponds to a lower water level inside the shroud at 100% power due to the pressure drop across the dryer/separator. This has been accounted for in the affected transient analysis. This trip initiates closure of Group 2 primary containment isolation valves. Reference Section 7.7.2.2 FSAR. The trip setting provides assurance that the valves will be closed before perforation of the clad occurs even for the maximum break in that line and therefore the setting is adequate.

The low low reactor water level instrumentation is set to trip when reactor water level is ≥-48". This trip initiates closure of the Group 1 and Group 3 Primary containment isolation valves, Reference Section 7.7.2.2 FSAR, and also activates the ECC systems and starts the emergency diesel generators.

Bases 3.2 (Continued):

The RBM bypass time delay is set low enough to assure minimum rod movement while upscale trips are bypassed.

The IRM rod block function provides local as well as gross core protection. The scaling arrangement is such that trip setting is less than a factor of 10 above the indicated level. Analysis of the worst case accident results in rod block action before MCPR approaches the Safety Limit (T.S.2.1.A).

A downscale indication of an APRM or IRM is an indication the instrument has failed or the instrument is not sensitive enough. In either case the instrument will not respond to changes in control rod motion and thus control rod motion is prevented. The downscale rod blocks assure that there will be proper overlap between the neutron monitoring systems and thus, that adequate coverage is provided for all ranges of reactor operation. The downscale trips are set at 3/125 of full scale.

For effective emergency core cooling for the small pipe break the HPCI or Automatic Pressure Relief system must function since for these breaks, reactor pressure does not decrease rapidly enough to allow either core spray or LPCI to operate in time. The arrangement of the tripping contacts is such as to provide this function when necessary and minimize spurious operation. The trip settings given in the specification are adequate to assure the above criteria is met. Reference Section 6.2.4 and 6.2.6 FSAR. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

Four radiation monitors (two reactor building vent plenum and two refueling floor) are provided which initiate isolation of the reactor building and operation of the standby gas treatment system trip systems following a refueling accident. The two radiation monitors/channels (A & B) for a given function are shared between the two trip systems. The monitors measure radioactivity in the reactor building ventilation exhaust and on the refueling floor. One upscale trip signal or two downscale/inoperable trip signals, from a pair of monitors performing the same function, will cause the desired action. Trip settings of 100 mR/hr for the reactor building vent plenum monitors and the refueling floor monitors are based upon initiating normal ventilation isolation and standby gas treatment system operation so that none of the activity released during the refueling accident leaves the reactor building via the normal ventilation stack but that all the activity is processed by the standby gas treatment system.

The recirculation pump trip is provided to minimize reactor pressure in the highly unlikely event of a plant transient coincident with the failure of all control rods to scram. The rapid flow reduction increases core voiding, a negative reactivity feedback. High pressure sensors initiate the pump trip in the event of an isolation transient. Low level sensors initiate the trip on loss of feedwater (and the resulting MSIV closure). The recirculation pump trip is only required at high reactor power levels, where the safety/relief valves have insufficient capacity to relieve the steam which continues to be generated after reactor isolation in this unlikely postulated event, requiring the trip to be operable only when in the RUN mode is therefore conservative.