Constellation Energy
Nine Mile Point Nuclear Station

P.O. Box 63
Lycoming, New York 13093

August 17, 2004
NMP1L 1859

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

SUBJECT: Nine Mile Point Unit 1
Docket No. 50-220
License Amendment Request Pursuant to 10 CFR 50.90: Addition of 24 Hours for Restoration of Primary Containment Oxygen Concentration

Gentlemen:

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC, (NMPNS) hereby requests an amendment to Nine Mile Point Unit 1 (NMP1) Operating License DPR-63. The proposed changes to the Technical Specifications (TSs) contained herein would update Section 3.3.1, "Oxygen Concentration," to (1) add a new action allowing 24 hours to restore the oxygen concentration to within the limit of <4% by volume if the limit is exceeded when the reactor is in the power operating condition and (2) incorporate the necessary conforming changes. The proposed 24 hour completion time for restoring the oxygen concentration to within the limit is consistent with the Improved Standard TSs (ISTS) for Boiling Water Reactors (NUREG-1433, Revision 3). Attachment 1 provides an evaluation of the proposed changes. The TS changes (mark-ups) are provided in Attachment 2. The Bases for TS 3/4.3.1 will be revised to reflect the proposed changes to the TSs. The Bases changes (mark-ups) are provided in Attachment 3 for information only and do not require NRC issuance.

The license amendment is needed to facilitate at-power entry into the primary containment drywell for inspections, troubleshooting, and possible repairs to address off-normal indications associated with the motor for reactor recirculation pump (RRP) #15. The upper radial and thrust bearings on the motors for the RRPs are oil lubricated and cooled by the Reactor Building Closed Loop Cooling (RBCLC) system. The lower radial bearing is oil lubricated and air-cooled. On June 19, 2004, an alarm was received for high level in the oil reservoir for the RRP #15 motor upper radial bearing, which may be indicative of RBCLC water inleakage from the bearing cooler. A visual inspection and analysis of the lubricating oil are required to confirm this cause. In addition, an alarm was also received for low level in the oil reservoir for the RRP #15 motor lower radial bearing, which may be indicative of a loss of lubricating oil. A visual inspection is

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required to confirm this cause. It is possible that either or both oil level alarms are the result of failures or improper calibration of the oil reservoir level switches. Troubleshooting and the possible repair or replacement of these level switches would require entry into the drywell.

Safe entry into the drywell requires that the primary containment be deinerted. TS Section 3.3.1 currently requires the reactor coolant pressure to be reduced to 110 psig or less within ten hours if the primary containment atmosphere is deinerted to ≥4% by volume oxygen concentration. The proposed TS changes will allow deinerting of the primary containment and drywell entry for the inspections, troubleshooting, and possible repairs needed to address the off-normal indications associated with RRP #15 without having to shutdown the plant.

The proposed changes have been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that the changes involve no significant hazards considerations.

NMPNS requests approval of this application on an expedited schedule and issuance of the license amendment by October 1, 2004, with 15 days allowed for implementation. As previously discussed, the amendment is needed to support a scheduled plant downpower in October 2004 to address the off-normal indications associated with RRP #15. This letter contains no new commitments.

Pursuant to 10CFR50.91(b)(1), NMPNS has provided a copy of this license amendment request and the associated analyses regarding no significant hazards considerations to the appropriate state representative.

Very truly yours,

James A. Spina
Vice President Nine Mile Point

JAS/CDM/jm

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

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

James A. Spina
Vice President Nine Mile Point

Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 17th day of August, 2004.

WITNESS my Hand and Notarial Seal:

SANDRA A. OSWALD
Notary Public, State of New York
No. 01OS6032276
Qualified in Oswego County
Commission Expires 10-25-05

Notary Public

My Commission Expires: 10/25/05

8/17/04
Date

Attachments:
1. Evaluation of Proposed Technical Specification Changes
2. Proposed Technical Specification Changes (Mark-up)
3. Technical Specification Bases Changes (Mark-up for Information Only)

cc: Mr. S. J. Collins, NRC Regional Administrator, Region I
Mr. G. K. Hunegs, NRC Senior Resident Inspector
Mr. P. S. Tam, Senior Project Manager, NRR (2 copies)
Mr. John P. Spath, NYSERDA

ATTACHMENT 1

EVALUATION OF PROPOSED TECHNICAL SPECIFICATION CHANGES

Subject: License Amendment Request Pursuant to 10 CFR 50.90: Addition of 24 Hours for Restoration of Primary Containment Oxygen Concentration

1.0 DESCRIPTION

2.0 PROPOSED CHANGE

3.0 BACKGROUND

4.0 TECHNICAL ANALYSIS

5.0 REGULATORY SAFETY ANALYSIS

6.0 ENVIRONMENTAL CONSIDERATION

1.0 DESCRIPTION

This letter is a request to amend Operating License DPR-63 for Nine Mile Point Unit 1 (NMP1).

The proposed changes to the Technical Specifications (TSs) would update Section 3.3.1, "Oxygen Concentration," to (1) add a new action allowing 24 hours to restore the oxygen concentration to within the limit of <4% by volume if the limit is exceeded when the reactor is in the power operating condition and (2) incorporate the necessary conforming changes. The proposed 24 hour completion time for restoring the oxygen concentration to within the limit is consistent with the Improved Standard TSs (ISTS) for Boiling Water Reactors (NUREG-1433, Revision 3). The Bases for TS 3/4.3.1, "Oxygen Concentration," will be revised to reflect the proposed changes to the TSs.

The proposed changes to the TSs and the associated changes to the TS Bases are indicated in the mark-up pages provided in Attachments 2 and 3, respectively. The TS Bases changes are provided for information only and do not require NRC issuance as they will be controlled by the NMP1 TS Bases Control Program (TS 6.5.6).

This license amendment is needed to facilitate at-power entry into the drywell for inspections, troubleshooting, and possible repairs to address off-normal indications associated with the motor for reactor recirculation pump (RRP) #15. The upper radial and thrust bearings on the motors for the RRPs are oil lubricated and cooled by the Reactor Building Closed Loop Cooling (RBCLC) system. The lower radial bearing is oil lubricated and air-cooled. On June 19, 2004, an alarm was received for high level in the oil reservoir for the RRP #15 motor upper radial bearing, which may be indicative of RBCLC water inleakage from the bearing cooler. A visual inspection and analysis of the lubricating oil are required to confirm this cause. In addition, an alarm was also received for low level in the oil reservoir for the RRP #15 motor lower radial bearing, which may be indicative of a loss of lubricating oil. A visual inspection is required to confirm this cause. It is possible that either or both oil level alarms are the result of failures or improper calibration of the oil reservoir level switches. Troubleshooting and possible repair or replacement of these level switches require entry into the drywell.

Due to the off-normal thrust bearing oil level indications described above, RRP #15 has been removed from service since its continued operation could result in significant motor and/or pump damage, potentially including failure of the pump mechanical seal. Mechanical seal failure would cause high reactor coolant leakage into the drywell that would exceed the TS leakage limit, requiring a plant shutdown. The TSs permit continued plant operation with four or three operating RRPs. However, overall plant reliability is reduced because a single failure of power board #11, which is the power source for the motor-generator sets for RRPs #11 and #12, would result in plant shutdown since only RRPs #13 and #14 would remain operational. The TSs do not permit power operation with fewer than three operating RRPs. Therefore, it is highly desirable to repair RRP #15 and return it to service in order to restore operating margin and maximize plant reliability.

Safe entry into the drywell requires that the primary containment be deinerted. TS Section 3.3.1 currently requires the reactor coolant pressure to be reduced to 110 psig or less within ten hours if the primary containment atmosphere is deinerted to ≥4% by volume oxygen concentration. The proposed TS changes will allow deinerting of the primary containment and drywell entry for the inspections, troubleshooting, and possible repairs needed to address the off-normal indications associated with RRP #15 without having to shutdown the plant.

2.0 PROPOSED CHANGE

Specification 3.3.1.a

The Limiting Condition for Operation (LCO) for reducing the oxygen concentration in the primary containment atmosphere to less than four percent by volume with nitrogen gas is revised to include the new Specification *"c"* action as an exception to the LCO.

New Specification 3.3.1.c

The following LCO action statement is added to allow 24 hours to restore the oxygen concentration to within the limit: *"If the containment oxygen concentration is greater than or equal to the four percent by volume limit, except as allowed during startup and shutdown in "b" above, restore the oxygen concentration to within the limit within 24 hours."*

Specification 3.3.1.d (renumbered from 3.3.1.c)

The LCO action is revised to include the new Specification *"c"* action as one of the conditions, as applicable, that must be met for continued plant operation.

Bases for TS 3.3.1 and 4.3.1

The TS Bases information is being updated to provide the necessary background and basis information to assure that the LCO applicability statements and associated actions related to primary containment oxygen concentration are properly applied during power operating conditions, as well as during plant startup and shutdown.

In summary, the proposed changes revise TS Section 3.3.1 and the associated Bases to (1) add a new action allowing 24 hours to restore the oxygen concentration to within the limit of <4% by volume if the limit is exceeded and (2) incorporate the associated conforming changes.

3.0 BACKGROUND

The NMP1 primary containment system is designed to contain the mass and energy released during a postulated Loss of Coolant Accident (LOCA), including the energy

released by the associated credible metal-water reaction. The primary method to control the hydrogen generated following a LOCA and prevent a combustible hydrogen-oxygen mixture from accumulating in the primary containment is to maintain the containment inerted (i.e., oxygen concentration <4% by volume) with nitrogen gas. With the primary containment inerted, a combustible mixture cannot be present in the containment for any hydrogen concentration. A LOCA that rapidly generates hydrogen from a metal-water reaction will result in excessive hydrogen in the primary containment, but the oxygen concentration will remain <4% by volume and no combustion can occur. TS LCO 3.3.1.a limits the oxygen concentration in the primary containment atmosphere to <4% by volume in the applicable conditions to ensure that, in the event of a LOCA, any hydrogen generation will not result in a combustible mixture within the primary containment system.

The generation of significant quantities of hydrogen following LOCA due to a metal-water reaction is prevented by adequate core cooling. A reliable, automatic means of cooling the core is provided by the core spray system. This system is designed to provide sufficient core cooling in accordance with the limits of 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," assuming any single failure in addition to a loss of offsite power. The core spray system is described in Section VII-A of the NMP1 Updated Safety Analysis Report (UFSAR). TS LCO 3.1.4.a requires both core spray systems to be operable whenever irradiated fuel is in the reactor vessel and the reactor coolant temperature is >212° F.

The combustible gas control system is designed to prevent a combustible hydrogen-oxygen concentration from accumulating in the primary containment atmosphere following a LOCA by inerting the atmosphere with nitrogen gas. Failure of the core spray system to cool the core following a LOCA would result in core heatup and the production of hydrogen from the ensuing metal-water reaction between the zirconium fuel cladding and the primary coolant. Additionally, the continued absorption of fission product decay energy under post-LOCA conditions causes radiolytic decomposition of water, which produces hydrogen and oxygen that can accumulate in the containment. The combustible gas control system and its associated accident mitigating functions are described below and also in Section VII-G of the NMP1 UFSAR.

The combustible gas control system consists of two functionally independent systems: the containment inerting system and the containment atmosphere dilution (CAD) system.

The containment inerting system is used for initial drywell and torus atmosphere inertion within 24 hours after plant startup. This is accomplished by purging the air from the drywell and torus with nitrogen gas to obtain an oxygen concentration of <4% by volume. The nitrogen for initial containment purging is supplied from a bulk nitrogen storage tank. Nitrogen makeup during normal operation is provided by one of two redundant nitrogen supply systems. The containment inerting system is also used for deinertion during plant shutdown, which is allowed to commence 24 hours prior to a scheduled shutdown. For containment deinerting, the nitrogen atmosphere is purged from the drywell and torus by a fan and replaced with normal air. The normal purge path

is directly to the stack; however, alternate off normal vent paths exist for discharge to the reactor building emergency ventilation system (for filtered release) and also to the main condenser.

The CAD system is designed to maintain a noncombustible hydrogen-oxygen concentration in the drywell and torus to control the radiolytic formation of oxygen following a LOCA by diluting the oxygen concentration to <4% by volume. Following a LOCA, hydrogen and oxygen may be released within the primary containment from postulated metal-water reactions and from radiolysis. The initially inerted containment prevents the combustion of hydrogen evolved from a metal-water reaction; however, radiolytic decomposition results in the release of both hydrogen and oxygen to the containment. The CAD system functions by adding nitrogen gas to the primary containment atmosphere as the radiolytic formation of oxygen occurs. This is accomplished via remote-manual operation from the control room to supply nitrogen to the containment from the same bulk nitrogen storage tank and redundant supply systems that are used for the containment inerting system. The CAD system also provides for containment venting which may be needed under post-LOCA conditions to control hydrogen and oxygen concentrations or to avoid exceeding containment pressure limits. Vent paths are provided to vent the containment atmosphere to the reactor building emergency ventilation system, to the normal reactor building ventilation system, or directly to the stack.

The NRC recently revised 10 CFR 50.44, "Combustible gas control for nuclear power reactors," to remove the definition of a design-basis LOCA hydrogen release and eliminate the requirements for hydrogen control systems (i.e., hydrogen recombiners and/or backup hydrogen vent and purge systems, such as the CAD system) to mitigate such a release. As a result, the current rule provides requirements for the mitigation of combustible gas generated by a beyond design-basis (severe accident) LOCA only. As discussed in the Statements of Consideration (SOCs) for the final rule (Ref: 68 FR 54123; 09/16/03), the NRC found that the hydrogen release from a design-basis LOCA is not risk-significant since it did not contribute to the conditional probability of a large release up to approximately 24 hours after the onset of core damage. Furthermore, the NRC found that the post-LOCA containment loadings associated with long-term hydrogen concentrations are no worse than those considered in the first 24 hours and are, therefore, also not risk-significant. The accumulation of combustible gases beyond 24 hours can be managed by implementation of the NMP1 emergency operating procedures (EOPs) and severe accident guidelines and procedures, which were developed from the Boiling Water Reactor (BWR) Owners' Group Emergency Procedure and Severe Accident Guidelines, Revision 1.

As discussed above, the revised 10 CFR 50.44 rule eliminates the hydrogen release associated with a design-basis LOCA and the requirements for the CAD system. However, in BWR plants with Mark I and II containments such as NMP1, the containment atmosphere is still required to be maintained with a low concentration of oxygen, rendering it inert to combustion. According to the SOCs for the final rule, Mark I and II containments, given their relatively small volume and large zirconium inventory,

can be challenged beyond 24 hours by the long-term generation of oxygen through radiolysis. Therefore, retaining the requirement that all BWR Mark I and II type containments be inerted will maintain the current level of public protection by ensuring containment integrity in the event of a severe accident (i.e., a beyond design-basis LOCA event).

4.0 TECHNICAL ANALYSIS

TS LCO 3.3.1.a currently requires the primary containment atmosphere to be reduced to <4% by volume oxygen concentration whenever the reactor coolant pressure is >110 psig and the reactor is in the power operating condition, except for when the startup and shutdown provisions apply as specified in Specification 3.3.1.b. LCO 3.3.1.a is proposed to be revised to include the proposed new Specification 3.3.1.c as an additional exception, since it is an LCO action statement.

As previously discussed, in the unlikely event a LOCA was to occur and the core spray system failed to cool the core adequately, the rapid generation of hydrogen from a metal-water reaction will result in excessive hydrogen in the primary containment. However, if the oxygen concentration remains <4% by volume, no combustion would result. The containment inerting system functions to limit the oxygen concentration in the primary containment atmosphere to <4% by volume pursuant to TS LCO 3.3.1.a to assure that, in the event of a design-basis LOCA, any hydrogen generation from metal-water reaction will not result in a combustible mixture within the primary containment system. The revised 10 CFR 50.44 rule eliminates the hydrogen release associated with a design-basis LOCA and the requirements for the CAD system. However, in BWR plants with Mark I and II containments, such as NMP1, the containment atmosphere is still required to be maintained with a low concentration of oxygen, rendering it inert to combustion. Retaining the requirement that all BWR Mark I and II type containments be inerted will maintain the current level of public protection by ensuring containment integrity in the event of a severe accident (i.e., a beyond design-basis LOCA event). Accordingly, TS LCO 3.3.1.a will continue to require that the primary containment atmosphere be maintained at the prescribed low oxygen concentration of <4% by volume whenever the reactor is in the power operating condition, except as allowed by Specifications 3.3.1.b and 3.3.1.c.

Currently, TS Section 3.3.1 does not include an LCO action to restore the oxygen concentration in the primary containment to within the limit prior to LCO action 3.3.1.c requiring the reactor coolant pressure to be reduced to ≤110 psig. As indicated in the TS Bases for 3/4.3.1, the current LCO action 3.3.1.c requires a plant shutdown in order to comply with the specified reactor coolant pressure limit. It is proposed to add a new LCO action 3.3.1.c to "*...restore the oxygen concentration to within the limit within 24 hours.*" The current LCO shutdown action is renumbered from 3.3.1.c to 3.3.1.d. The new LCO action 3.3.1.c, in conjunction with the change to LCO action 3.3.1.d (previously 3.3.1.c) described below, will allow 24 hours to restore the oxygen concentration to within the limit before requiring a plant shutdown to meet the requirement that reactor coolant pressure be reduced to ≤110 psig within 10 hours. The

proposed 24 hours for restoration is justified based on the low probability of a LOCA occurring during this period and the high reliability of the core spray system to cool the core adequately to prevent any significant hydrogen generation from metal-water reaction in the unlikely event a LOCA did occur. Furthermore, the 24 hour period in which the containment would be allowed to be deinerted is consistent with the current 24 hour startup and shutdown allowances of TS 3.3.1.b and the ISTS (NUREG-1433, Revision 3). In addition, the proposed action allowing 24 hours for restoration of the oxygen concentration could be beneficial to plant safety by preventing unnecessary shutdowns and the increased potential for transients associated with the shutdown.

The current LCO action 3.3.1.c is proposed to be renumbered to 3.3.1.d and the new LCO action 3.3.1.c is proposed to be included in the list of Specifications in LCO action 3.3.1.d that, if not met, would require a plant shutdown and a reactor coolant pressure reduction to ≤110 psig within 10 hours. The addition of the new action 3.3.1.c to action 3.3.1.d is necessary since the failure to meet a required action and associated completion time requires the plant to be placed in a condition in which the LCO no longer applies. LCO action 3.3.1.c (to be renumbered from 3.3.1.d) currently serves the TS function of listing the applicable LCO and associated actions and prescribing the plant conditions necessary to exit the LCO applicability if these requirements are not met. Adding action 3.3.1.c to the list of associated actions preserves this TS function. The proposed renumbering of LCO action 3.3.1.c to 3.3.1.d is a conforming change only and is administrative.

Conforming changes to the TS 3/4.3.1 Bases will be incorporated to reflect the proposed changes to the TSs. The Bases changes are consistent with the ISTS Bases (NUREG-1433, Revision 3), as applicable, and will provide the necessary background and basis information to assure that the LCO applicability statements and associated actions related to primary containment oxygen concentration are properly applied during power operating conditions, as well as during plant startup and shutdown. The Bases changes are for clarity only and do not alter any technical requirements and are administrative in nature. Therefore, the Bases changes will have no adverse impact on plant safety. These changes will be made upon implementation of the approved license amendment for the associated TS changes in accordance with the NMP1 Bases Control Program (TS 6.5.6).

Based on the above analysis, the proposed changes to TS Section 3.3.1 will (1) add a new action allowing 24 hours to restore the oxygen concentration to within the limit of <4% by volume if the limit is exceeded when the reactor is in the power operating condition and (2) incorporate the necessary conforming changes. Providing 24 hours for restoration of the oxygen concentration to within the limit is justified based on the low probability of a LOCA occurring during this period and the high reliability of the core spray system to cool the core adequately to prevent any significant hydrogen generation from metal-water reaction in the unlikely event a LOCA did occur. The 24 hour period in which the containment would be allowed to be deinerted is consistent with the current 24 hour startup and shutdown allowances and the ISTS (NUREG-1433, Revision 3). The incorporation of the 24 hour restoration action could prevent unnecessary plant

shutdowns and the increased potential for transients associated with the shutdown. The TS conforming changes and the changes to the TS Bases are considered administrative.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration Analysis

The proposed changes update the oxygen concentration requirements in the Technical Specifications (TSs) to (1) add a new action allowing 24 hours to restore the oxygen concentration to within the limit if the limit is exceeded when the reactor is in the power operating condition and (2) incorporate the necessary conforming changes. The TS Bases will be revised to reflect the proposed changes to the TSs.

Nine Mile Point Nuclear Station, LLC, (NMPNS) 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 change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   Maintaining the oxygen concentration within the limit provides a mitigating function and is not an initiator of any previously evaluated accidents. The proposed change allowing 24 hours for restoration of the oxygen concentration is consistent with the current startup and shutdown allowances and, thus, will not increase the probability of a Loss of Coolant Accident (LOCA) occurring. The proposed changes will have no impact on the capability of the core spray system to cool the core adequately to prevent the generation of significant quantities of hydrogen from metal-water reaction following a LOCA. As such, there will be no adverse effect on the safety function of the oxygen concentration limit, which is to prevent a combustible hydrogen-oxygen mixture from accumulating in the containment following a design-basis LOCA. Based on the recent revision to 10 CFR 50.44, the hydrogen release from a design-basis LOCA is not risk-significant because it is not large enough to lead to early containment failure and the post-LOCA containment loadings associated with long-term hydrogen concentrations are not increased. Therefore, the proposed changes do not involve any increase in the potential challenges to primary containment integrity and continued assurance is provided that there will be no degradation of any fission product barrier that would affect the offsite dose consequences of a LOCA pursuant to 10 CFR 100. Accordingly, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed changes do not involve any physical modification to the plant and will not adversely affect the design or assumed accident performance of any structure, system, or component. The oxygen concentration is maintained within the limit to mitigate a design-basis LOCA hydrogen release and is not considered an accident precursor. The primary containment and core spray systems will continue to perform their accident mitigation safety functions as previously evaluated such that no new accident initiators or failure mechanisms are introduced. Therefore, the proposed changes do 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 changes do not affect the capability of the core spray system to prevent the generation of significant quantities of hydrogen from metal-water reaction in the event of a LOCA. As such, there will be no adverse effect on the safety function of the oxygen concentration limit. The proposed change allowing 24 hours for restoration of the oxygen concentration is based on the low probability of a LOCA occurring within the 24 hour period, which is consistent with the basis for existing allowances. Based on the recent revision to 10 CFR 50.44, the hydrogen release from a design-basis LOCA is not risk-significant because it is not large enough to lead to early containment failure and the post-LOCA containment loadings associated with long-term hydrogen concentrations are not increased. Therefore, the proposed changes will have no significant impact on the primary containment safety function, which is to contain and suppress the mass and energy released during a LOCA, and the offsite dose consequences of a LOCA will remain a small fraction of the 10 CFR 100 limits. In addition, the proposed changes could benefit plant safety by preventing unnecessary shutdowns and the associated risk of potential transients. Accordingly, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above, NMPNS concludes that the proposed amendment presents no significant hazards considerations 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

The primary containment oxygen concentration requirements satisfy Criterion 4 of 10 CFR 50.36(c)(2)(ii) for inclusion in the TSs, in that probabilistic risk assessment has shown that the risk of early containment failure can be limited by inerting Mark I and II containments. Thus, the oxygen concentration requirements are retained to maintain the

current level of public protection. The primary containment oxygen concentration is maintained <4% by volume to ensure that an event that produces any amount of hydrogen does not result in a combustible mixture inside the primary containment. Based on the recent revision to 10 CFR 50.44, the hydrogen release from a design-basis LOCA is not risk-significant and the long-term accumulation of combustible gases can be managed by implementation of the severe accident guidelines. The current 24 hour startup and shutdown deinerting provisions are based on the low probability of a LOCA occurring during the 24 hour periods that the containment is allowed to be deinerted. In the unlikely event a LOCA did occur, the core spray system provides a reliable, automatic means of core cooling in accordance with 10 CFR 50.46. The core spray system will prevent the generation of any significant quantities of hydrogen from metal-water reaction following a LOCA coincident with a loss of offsite power and worst-case single failure.

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, (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 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.

ATTACHMENT 2

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

The current versions of Technical Specification pages 124 and 125 have been marked-up by hand to reflect the proposed changes.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.3.1 OXYGEN CONCENTRATION	4.3.1 OXYGEN CONCENTRATION
Applicability:	Applicability:
Applies to the limit on oxygen concentration within the primary containment system.	Applies to the periodic testing requirement for the primary containment system oxygen concentration.
Objective:	Objective:
To assure that in the event of a loss-of-coolant accident any hydrogen generation will not result in a combustible mixture within the primary containment system.	To assure that the oxygen concentration within the primary containment system is within required limits.
Specification:	Specification:
a. The primary containment atmosphere shall be reduced to less than four percent by volume oxygen concentration with nitrogen gas whenever the reactor coolant pressure is greater than 110 psig and the reactor is in the power operating condition, except as specified in "b" and "c" below.	At least once a week oxygen concentration shall be determined.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
b. Within the 24-hour period subsequent to the reactor being placed in the run mode for the power operating condition, the containment atmosphere oxygen concentration shall be reduced to less than four percent by volume, and maintained in this condition. Deinerting may commence 24 hours prior to a major refueling outage or other scheduled shutdown.	
d. If Specifications ~~"a" or "b"~~ "a," "b," or "c" above are not met, the reactor coolant pressure shall be reduced to 110 psig or less within ten hours.	
c. If the containment oxygen concentration is greater than or equal to the four percent by volume limit, except as allowed during startup and shutdown in "b" above, restore the oxygen concentration to within the limit within 24 hours.	

ATTACHMENT 3

TECHNICAL SPECIFICATION BASES CHANGES

(MARK-UP FOR INFORMATION ONLY)

The current version of Technical Specification Bases page 126 has been marked-up by hand to reflect the proposed changes. This Bases page is provided for information only and does not require NRC issuance.

The four percent by volume oxygen concentration eliminates the possibility of hydrogen combustion following a loss-of-coolant accident (Section VII-G.2.0 and Appendix E-II.5.2)*. The only way that significant quantities of hydrogen could be generated by metal-water reaction would be if the core spray system failed to sufficiently cool the core. As discussed in Section VII-A.2.0*, each core spray system will deliver, as a minimum, core spray sparger flow as shown on Figure VII-2*. In addition to hydrogen generated by metal-water reaction, significant quantities can be generated by radiolysis. (Technical Supplement to Petition for Conversion from Provisional Operating License to Full Term Operating License).

At reactor pressures of 110 psig or less, the reactor will have been shutdown for more than an hour and the decay heat will be at sufficiently low values so that fuel rods will be completely wetted by core spray. The fuel clad temperatures would not exceed the core spray water saturation temperature of about 344°F.

The occurrence of primary system leakage following a major refueling outage or other scheduled shutdown is much more probable than the occurrence of the loss-of-coolant accident upon which the specified oxygen concentration limit is based. Permitting access to the drywell for leak inspections during a startup is judged prudent in terms of the added plant safety offered without significantly reducing the margin of safety. Thus to preclude the possibility of starting the reactor and operating for extended periods of time with significant leaks in the primary system, leak inspections are scheduled during startup periods when the primary system is at or near rated operating temperature and pressure. The 24-hour period to provide inerting is judged to be reasonable to perform the leak inspection and establish the required oxygen concentration.

The primary containment is normally slightly pressurized during periods of reactor operation. Nitrogen used for inerting could leak out of the containment but air could not leak in to increase the oxygen concentration. Once the containment is filled with nitrogen to the required concentration, no monitoring of oxygen concentration is necessary. However, at least once a week, the oxygen concentration will be determined as added assurance that Specification 3.3.1 is being met.

INSERT BASES

*FSAR

INSERT BASES

Inerting the primary containment is an operational problem because it prevents containment access without an appropriate breathing apparatus. Therefore, the primary containment is inerted as late as possible in the plant startup and deinerted as soon as possible in the plant shutdown. The probability of an event that generates hydrogen occurring within the first 24 hours of a startup, or within the last 24 hours before a shutdown, is low enough that these "windows," when the primary containment is not inerted, are also justified. The 24 hour time period is a reasonable amount of time to allow plant personnel to perform inerting or deinerting.

If oxygen concentration is greater than or equal to four percent by volume at any time while in the power operating condition, with the exception of the relaxations allowed during startup and shutdown, oxygen concentration must be restored to less than four percent by volume within 24 hours. The 24 hour completion time is allowed when oxygen concentration is greater than or equal to four percent by volume because of the low probability and long duration of an event that would generate significant amounts of hydrogen occurring during this period.

If oxygen concentration cannot be restored to within limits within the required completion time, reactor coolant pressure must be reduced to less than or equal to 110 psig within 10 hours.