NMC
Committed to Nuclear Excellence

Palisades Nuclear Plant
Operated by Nuclear Management Company, LLC

June 21, 2005 10 CFR 50.12

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

Exemption From 10 CFR 50.68(b)(1)

Pursuant to 10 CFR 50.12, Nuclear Management Company, LLC (NMC) requests Nuclear Regulatory Commission (NRC) review and approval of a proposed exemption request for the Palisades Nuclear Plant (PNP). NMC proposes an exemption from the requirements of 10 CFR 50.68(b)(1). This proposed exemption is needed to support future loading of independent spent fuel storage installation (ISFSI) casks at the PNP.

Enclosure 1 provides a detailed description of the proposed exemption request. Enclosure 2 provides information related to the environmental assessment and finding of no significant impact. Enclosure 3 provides a non-proprietary copy of the plant-specific criticality analysis for the Transnuclear (TN) NUHOMS®-32PT cask system. Enclosure 4 provides a copy of the plant-specific boron dilution analysis for the TN NUHOMS®-32PT cask system.

The next loading campaign for ISFSI casks is scheduled to occur in the fall of 2005. NMC requests approval of this proposed exemption request by September 15, 2005, to support the loading campaign.

Summary of Commitments

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

1. While approval of proposed Amendment 9 to TN NUHOMS Certificate of Compliance (CoC) 1004 would allow the required soluble boron limit in the spent fuel pool (SFP) to be reduced, NMC will continue to conduct dry shielded canister (DSC) operations at a boron concentration of ≥ 2500 ppm, subsequent to approval of Amendment 9, as currently required by CoC 1004.

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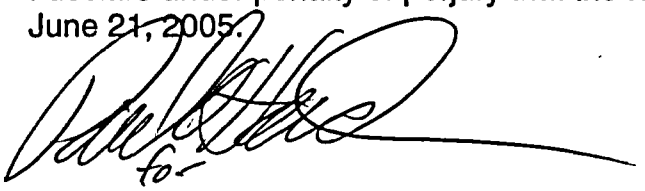
2. NMC will revise procedures to include a requirement that whenever a 32PT DSC is in the SFP and fuel is in the DSC, the SFP level will be monitored on at least an hourly frequency (via television monitor or locally) to ensure that the SFP is not overflowing and that SFP water level is not unintentionally rising.

3. NMC will revise procedures to include a requirement that whenever a 32PT DSC is in the SFP and fuel is in the DSC, the SFP will be sampled for boron concentration after additions of unborated makeup water that result in a net one-inch or greater change in SFP level.

4. NMC will revise the SFP high level alarm response procedure to identify that if there is a fueled DSC in the SFP, additional boron concentration limits apply. These limits will be specified in the procedure.

5. NMC will conduct training to ensure that the operators are aware of the SFP boron concentration requirements associated with the NUHOMS®-32PT DSC. This operator training will ensure the operators are aware of the 32PT DSC TS SFP boron concentration requirements, and should a boron dilution occur, at what boron concentration criticality in the DSC could occur. The training will emphasize the importance of avoiding any inadvertent additions of unborated water to the SFP, responses to be taken for notification or alarms that may be indicative of a potential boron dilution event during DSC loading in the SFP, and identification of the potential for a boron dilution event during decontamination rinsing activities.

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 21, 2005.



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Enclosures (4)

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ENCLOSURE 1
DESCRIPTION OF EXEMPTION REQUEST

1.0 BACKGROUND

The Transnuclear (TN) NUHOMS®-32PT storage system with the dry shielded canister (DSC) is designed to hold 32 spent fuel assemblies for independent spent fuel storage installation (ISFSI) deployment, commonly referred to as the NUHOMS®-32PT DSC or 32PT DSC, and is listed in 10 CFR 72.214 as Certificate Number 1004. This system is currently installed and in-use at the Palisades Nuclear Plant. Regulatory Issue Summary (RIS) 2005-05, "Regulatory Issues Summary Regarding Criticality Analyses for Spent Fuel Pools and Independent Spent Fuel Storage Installations," describes potential inconsistencies between the regulatory bases of spent fuel pools (SFPs) and independent spent fuel storage installations (ISFSIs). Nuclear Management Company, LLC (NMC) has determined that such an inconsistency exists for the Palisades Nuclear Plant (PNP). Specifically, the 10 CFR 50 criticality analyses for fuel assemblies loaded into DSCs in the PNP SFP do not assume unborated water conditions. Therefore, NMC is unable to satisfy the 10 CFR 50.68(b)(1) requirement for handling the 10 CFR Part 72 licensed contents of the NUHOMS®-32PT system.

2.0 REQUEST

Pursuant to 10 CFR 50.12, "Specific Exemption," NMC requests an exemption from the requirements of 10 CFR 50.68 (b)(1) relative to demonstrating that k-effective (keff) will be maintained < 1.0 under unborated conditions postulated to occur during fuel handling activities associated with loading, unloading, and handling of components of the NUHOMS®-32PT cask system installed at the PNP. This proposed exemption is justified based on substantial criticality prevention features incorporated within the design of the NUHOMS®-32PT storage system, the requirement for soluble boron to prevent criticality included in the Technical Specifications (TS) for the NUHOMS®-32PT storage system, the conservative nature of the criticality analysis performed in support of licensing the storage system, and the low likelihood of a boron dilution event occurring during anticipated fuel loading and handling operations. In addition, NMC proposes specific supplemental actions to further reduce the opportunity for, and consequences of, a boron dilution event occurring during DSC loading operations in the SFP.

3.0 REGULATORY REQUIREMENTS

10 CFR 50.68(b) provides specific requirements related to prevention of criticality during fuel handling activities.

1. 10 CFR 50.68(b)(1) specifically states, *"Plant procedures shall prohibit the handling and storage at any one time of more fuel assemblies than have been determined to be safely subcritical under the most adverse moderation conditions feasible by unborated water."*

2. 10 CFR 50.68(b)(4) further stipulates, *"If credit is taken for soluble boron, the k-effective of the spent fuel storage racks loaded with fuel of the maximum fuel assembly reactivity must not exceed 0.95, at a 95 percent probability, 95 percent confidence level, if flooded with borated water, and the k-effective must remain below 1.0 (subcritical), at a 95 percent probability, 95 percent confidence level, if flooded with unborated water."*

As allowed by 10 CFR Part 72, the approved criticality analysis of the NUHOMS®-32PT DSC is based upon credit for soluble boron concentration to maintain keff less than 0.95. Supplemental analyses to demonstrate keff is maintained < 1.0 under unborated conditions are not required under 10 CFR Part 72.

4.0 JUSTIFICATION

10 CFR 50.12(a) allows licensees to apply for exemptions, and the Commission to grant exemptions from the requirements of the regulations, where the exemptions are authorized by law, will not present an undue risk to the public health or safety, and are consistent with the common defense and security. Exemptions are only granted when special circumstances are present. NMC asserts that the following special circumstances exist in support of this proposed exemption.

5.0 SPECIAL CIRCUMSTANCES

10 CFR 50.12(a)(2)(ii) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule,. . .

Application of the 10 CFR 50.68(b)(1) and (b)(4) criticality prevention standard to the storage and handling of fuel assemblies retained in the permanently installed racks located within the SFP is appropriate, and no exemption is requested in that regard. However, the application of 10 CFR 50.68(b)(1) criticality prevention standards to DSC loading operations, conducted in connection with a 10 CFR Part 72 license, is not necessary to achieve the underlying purpose of the rule. The underlying purpose of the rule is satisfied by the design

characteristics of, and safety analyses for, the NUHOMS®-32PT storage system, as well as the associated procedural controls, including TS requirements applicable to the storage system, which are designed to preclude conditions for accidental criticality.

The NRC has granted similar exemptions to Diablo Canyon Power Plant (Reference 1), Sequoyah Nuclear Plant (Reference 2), and Millstone Power Station (Reference 3). The PNP proposed exemption request is closely modeled after the Millstone Power Station exemption, except for site-specific characteristics.

In the Millstone Power Station exemption, the staff accepted that the underlying intent of 10 CFR 50.68(b)(1) is met if it can be demonstrated that an accidental criticality event is unlikely to occur. The staff also accepted that an inadvertent criticality accident is unlikely to occur if the following five criteria are met:

1. The cask [DSC] criticality analyses are based on the following conservative assumptions:

   a) All fuel assemblies in the DSC are unirradiated and at the highest permissible enrichment,

   b) Only 75 percent of the Boron-10 in the neutron absorber panel inserts is credited,

   c) No credit is taken for fuel-related burnable absorbers, and

   d) The DSC is assumed flooded with moderator at the temperature and density corresponding to optimum moderation.

2. The licensee's ISFSI TS requires the soluble boron concentration to be equal to or greater than the level assumed in the criticality analysis and surveillance requirements necessitate the periodic verification of the concentration both prior to and during loading and unloading operations.

3. Radiation monitors, as required by GDC 63, "Monitoring Fuel and Waste Storage," are provided in fuel storage and handling areas to detect excessive radiation levels and to initiate appropriate safety actions.

4. The quantity of other forms of special nuclear material, such as sources, detectors, etc., to be stored in the DSC will not increase the effective multiplication factor above the limit calculated in the criticality analysis.

5. Sufficient time exists for plant personnel to identify and terminate a boron dilution event prior to achieving a critical boron concentration in the DSC. To demonstrate that it can safely identify and terminate a boron dilution event, the licensee must provide the following:

a) A plant-specific criticality analysis to identify the critical boron in the DSC based on the highest reactivity loading pattern.

b) A plant-specific boron dilution analysis to identify all potential dilution pathways, their flowrates, and the time necessary to reach a critical boron concentration.

c) A description of all alarms and indications available to promptly alert operators of a boron dilution event.

d) A description of plant controls that will be implemented to minimize the potential for a boron dilution event.

e) A summary of operator training and procedures that will be used to ensure that operators can quickly identify and terminate a boron dilution event.

The following information provides assurance that the above criteria will be met when using the NUHOMS®-32PT spent fuel storage system at the PNP.

Criterion 1

Amendment Number 7 to Certificate Number 1004, for the TN Standardized NUHOMS® System, effective March 2, 2004, cites the 32PT DSC on the list of DSC's authorized for use in the Standardized NUHOMS® System for dry storage of spent fuel. The design criteria for the NUHOMS® System require that the fuel loaded in the DSC remain subcritical under normal and accident conditions as defined in 10 CFR Part 72. The requirements presented in NUREG-1536, "Standard Review Plan for Dry Cask Storage System," were followed for the criticality analyses.

NUREG-1536 provides the following acceptance criteria for the criticality evaluation consistent with the requirements of Criterion 1:

Criticality safety of the cask system should not rely on use of the following credits:

a) burnup of the fuel

b) fuel-related burnable neutron absorbers

c) more than 75 percent for fixed neutron absorbers[a] when subject to standard acceptance tests

[a]For greater credit allowance, special, comprehensive fabrication tests capable of verifying the presence and uniformity of the neutron absorber are needed.

The criticality analyses performed for the 32PT DSC are described in Section 6, of Appendix M, of the Final Safety Analysis Report (FSAR), Revision 8, for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel. As required, the criticality analyses assume the fuel is unirradiated, no credit for fuel-related burnable neutron absorbers is taken, and less than full credit is taken for the fixed neutron absorber within the fuel basket.

The criticality analyses assume 90 percent credit is taken for the fixed neutron absorber in the basket. The use of 90 percent, versus 75 percent assumed credit for the fixed neutron absorber in the basket under the criterion, is justified based on fabrication tests verifying the presence and uniformity of the neutron absorber, as outlined in Section 6, of Appendix M, of the Standardized NUHOMS® FSAR. These analyses have been performed to establish the maximum allowed fuel enrichments for which the TS-specified soluble concentration will maintain keff below an upper subcritical limit (USL), which is $\leq$ 0.95 under conditions of optimum moderation.

Criterion 2

A condition of Certificate of Compliance (CoC) Number 1004 specifies that DSCs authorized by the certificate are approved for use by holders of 10 CFR Part 50 licenses for nuclear power reactors at reactor sites, under the general license issued pursuant to 10 CFR 72.210, subject to the conditions specified by 10 CFR 72.212, and the attached Technical Specifications (Technical Specifications attached to the CoC).

The Technical Specifications applicable to the 32PT DSC (attached to CoC 1004) contain the following requirements:

Limit/Specification:

"The DSC cavity shall be filled only with water having a boron concentration equal to, or greater than 2500 ppm."

Surveillance:

"Written procedures shall be used to independently determine (two samples analyzed by different individuals) the boron concentration in the water used to fill the DSC cavity.

1. Within 4 hours before insertion of the first fuel assembly into the DSC, the dissolved boron concentration in water in the spent fuel pool, and in the water that will be introduced in the DSC cavity, shall be independently determined (two samples chemically analyzed by two individuals).

2. Within 4 hours before flooding the DSC cavity for unloading the fuel assemblies, the dissolved boron concentration in water in the spent fuel pool,

and in the water that will be introduced into the DSC cavity, shall be independently determined (two samples chemically analyzed by two individuals).

3. The dissolved boron concentration in the water shall be reconfirmed at intervals not to exceed 48 hours until such time as the DSC is removed from the spent fuel pool or the fuel has been removed from the DSC."

Bases:

"The required boron concentration is based on the criticality analysis presented in Appendix M of this FSAR for loading of the DSC with unirradiated fuel, maximum enrichment, and optimum moderation conditions."

Criterion 3

Palisades FSAR section 5.1.7.4 describes compliance with GDC 63. As described in FSAR section 9.11.4.4, a radiation monitoring system is located next to the spent fuel pool. The radiation monitoring system consists of gamma sensitive detector assemblies in the spent fuel pool area, with audible alarm at the initiating detector and in the main control room. These area radiation monitors will alert the operators to excessive radiation levels in the spent fuel pool area. Operations personnel would investigate the reasons for the high radiation levels and initiate appropriate safety actions.

Criterion 4

The allowable contents of the 32PT DSC are specified in the CoC 1004 TS. These contents have been addressed in the criticality analyses performed in support of licensing this storage system. Burnable poison rod assemblies (BPRAs) and poison rod assemblies (PRAs) are not authorized to be stored with Combustion Engineering (CE) 15x15 type assemblies in the 32PT DSC.

Criterion 5a

A copy of the plant-specific criticality analysis is provided in Enclosure 3. The analysis assumed 3.6 wt-percent U-235 enriched fuel, as opposed to the 3.4 wt-percent limit in the CoC 1004 TS, for added conservatism. Results indicate that a 32PT DSC filled with 3.6 wt-percent U-235 PNP (CE 15x15) unirradiated fuel, under optimum moderation conditions, would require ≥1850 ppm to maintain keff < 1.0. The analysis bounds the existing approved CoC 1004 and the proposed Amendment 9 of CoC 1004.

Proposed Amendment 9 to the NUHOMS CoC 1004, submitted April 21, 2004, provides analyses to support variable minimum required soluble boron concentrations as a function of the initial enrichment of the fuel to be stored. This amendment would allow the minimum required SFP boron concentration for

DSC loading to vary with the initial enrichment of the fuel to be stored in the DSC. The currently licensed 32PT system requires a minimum of 2500 ppm of soluble boron for initial enrichments of up to 3.4 wt.-percent U-235. Proposed Amendment 9 would allow the required soluble boron limit to be reduced in discrete steps corresponding to the initial enrichment, from a maximum limit of 2500 ppm for initial enrichments ≤ 3.5 wt.-percent U-235 to 1800 ppm limit for initial enrichments ≤ 3.0 wt.-percent U-235. These boron concentration values ensure that keff is maintained ≤ 0.95. While approval of proposed Amendment 9 would allow the required soluble boron limit in the SFP to be reduced, NMC will continue to conduct DSC operations at a boron concentration of ≥ 2500 ppm, subsequent to approval of Amendment 9, as currently required by CoC 1004 (Commitment 1).

Criterion 5b

The objective of the boron dilution analysis presented in this submittal is to confirm that design features, instrumentation, and administrative procedures allow sufficient time to detect and mitigate a boron dilution in the SFP before the boron concentration is reduced to a level that allows criticality of the fuel per the NUHOMS®-32PT DSC criticality analysis.

The current PNP licensing basis allows credit for soluble boron in the SFP. The SFP boron dilution analysis analyzed the potential dilution sources, alarms and administrative features that would be used to detect and mitigate a boron dilution event. Results indicate that the maximum credible dilution flow rate from an unborated water source would be 210 gpm.

NMC has conducted a boron dilution analysis using the results of the NUHOMS®-32PT DSC criticality analysis (Enclosure 4). The calculations show that at least 251 minutes (4.18 hours) will be available before the DSC water boron concentration lowers from 2500 ppm to the critical boron concentration of 1850 ppm.

Criterion 5c

Alarms and indications available to detect a boron dilution event in the PNP SFP have been previously reviewed by the NRC during approval of Amendment 207 to the PNP Technical Specifications. A summary is provided below.

There is no automatic level control system for the PNP SFP. Therefore, the SFP will overflow on an uncontrolled water addition. The PNP SFP has a high and low level alarm in the control room. The high level alarm was installed in 2004 to satisfy a NRC commitment. Given a 210 gpm water addition to the SFP, it will take 44.8 minutes (0.75 hours) for the SFP water level to go from a low level alarm condition to a high level alarm condition, and an additional 28.5 minutes (0.48 hours) to reach an overflow condition.

To ensure defense in depth regarding the detection of a boron dilution event, an additional administrative control will be established. NMC will revise procedures to include a requirement that whenever a 32PT DSC is in the SFP and fuel is in the DSC, the SFP level will be monitored on at least an hourly frequency (via television monitor or locally) to ensure that the SFP is not overflowing and that SFP water level is not unintentionally rising (Commitment 2).

When DSC operations are in progress in the SFP, there should be a continuous presence of personnel supporting the loading/unloading operations of fuel. Therefore, the likelihood of a boron dilution event and pool level increase going unnoticed is not reasonable. However, the requirement to monitor SFP level at least hourly whenever there is a fueled 32PT DSC in the SFP provides assurance that a dilution event will be detected prior to the pool overflow.

Using the above approach, should a boron dilution event occur with a limiting value of 210 gpm of unborated water being added to the SFP, and a fueled DSC present in the SFP, then the individual monitoring SFP level should be able to detect the condition prior to the SFP overflowing. For purposes of this discussion, the most conservative (longest) time for the individual to detect the dilution event would be when the SFP begins to overflow. Since it would take 73.3 minutes (1.22 hours) for the SFP to overflow, assuming 210 gpm dilution flow and pool water level starting at the low water level, then at most, a total of 73.3 minutes (1.22 hours) could have elapsed since the start of the dilution. Since the total time to dilute the SFP from 2500 ppm to 1850 ppm is 251 minutes (4.18 hours), then an additional 177.7 minutes (2.96 hours) is available to mitigate or terminate the event, which is more than sufficient time. Dilutions that are smaller than 210 gpm will result in additional time to detect, mitigate, and terminate the boron dilution event.

Criterion 5d

This section describes the plant controls that will be implemented to minimize the potential for boron dilution events.

During DSC operations in the SFP, small amounts of unborated water are used. This water will typically drain to the pool. NMC will revise procedures to include a requirement that whenever a 32PT DSC is in the SFP and fuel is in the DSC, the SFP will be sampled for boron concentration after additions of unborated makeup water that result in a net one-inch or greater change in SFP level (Commitment 3). The effect of this commitment will be to sample the SFP for boron after the addition of approximately 427 gallons of unborated water.

Criterion 5e

This section provides a summary of operator training and procedures that will be used to ensure operators can quickly identify and terminate a boron dilution event.

The need to detect and mitigate a boron dilution event in the PNP SFP is currently addressed in the licensing basis for the PNP. Boron dilutions, should they occur, will raise the water level in the SFP. Therefore, the SFP high level alarm response procedure specifies the required operator response actions for a boron dilution event. The operator response to the SFP high level alarm would be to secure SFP fill or sources of inleakage. NMC will revise the SFP high level alarm response procedure to identify that if there is a fueled DSC in the SFP, additional boron concentration limits apply. These limits will be specified in the procedure (Commitment 4).

NMC will conduct training to ensure that the operators are aware of the SFP boron concentration requirements associated with the NUHOMS®-32PT DSC. This operator training will ensure the operators are aware of the 32PT DSC TS SFP boron concentration requirements, and should a boron dilution occur, at what boron concentration criticality in the DSC could occur. The training will emphasize the importance of avoiding any inadvertent additions of unborated water to the SFP, responses to be taken for notification or alarms that may be indicative of a potential boron dilution event during DSC loading in the SFP, and identification of the potential for a boron dilution event during decontamination rinsing activities (Commitment 5).

In summary, the requested exemption applies only to an activity that was previously authorized under 10 CFR Part 72. An evaluation was performed to determine the PNP SFP boron dilution event that results in the shortest time to criticality for fuel in the NUHOMS®-32PT DSC. The limiting starting boron concentration of 2500 ppm was evaluated as the initial condition for the boron dilution event. Thus, the analysis presented here bounds both Amendment 7 and proposed Amendment 9 to CoC 1004. Criticality of the NUHOMS®-32PT DSC occurs at a boron concentration of 1850 ppm when using unirradiated 3.6 wt.-percent U-235 (no PRAs) CE 15x15 PNP fuel. The corresponding CoC 1004 TS required boron concentration is 2500 ppm to ensure keff $\leq$ 0.95 on a 95/95 basis.

The most limiting credible dilution path occurs when unborated firewater, with a maximum flow rate of 210 gpm, is added to the SFP. Based on an initial boron concentration of 2500 ppm and a dilution flow of 210 gpm, the time to reach a boron concentration of 1850 ppm is approximately 251 minutes (4.18 hours).

Should a boron dilution event occur, with a bounding value of 210 gpm of unborated water being added to the SFP, the SFP level would increase, since there is no automatic level control system. The operators would receive a high

SFP water level alarm in the control room. This alarm would be received within 44.8 minutes (0.75 hours) even if SFP water level were at the minimum level at the start of the event. The alarm response procedure for this alarm would cause the operators to investigate the cause and terminate the level increase. Should a DSC be present in the SFP, with fuel in the DSC, then having an individual monitoring SFP level on at least an hourly basis provides assurance that the dilution event would be detected prior to the pool overflowing (if for some reason the SFP high level alarm did not detect the boron dilution event). Since it would take 73.3 minutes (1.22 hours) for the pool to overflow, assuming a 210 gpm dilution flow and the pool water level starting at the low water level, then at most, a total of 73.3 minutes (1.22 hours) could have elapsed since the start of the dilution. Since the total time to dilute the SFP from 2500 ppm to 1850 ppm is 251 minutes (4.18 hours), then an additional 177.7 minutes (2.96 hours) is available to mitigate or terminate the event, which is more than sufficient time. Dilutions that are smaller than 210 gpm will result in additional time to detect, mitigate, and terminate the boron dilution event.

The above evaluation is conservative because the required boron concentrations to control reactivity in the NUHOMS®-32PT DSC do not credit fuel burnup. If fuel burnup was credited, then the required boron concentrations to maintain sub-criticality would be significantly lower.

6.0 CONCLUSION

NMC has provided information pertaining to the boron concentration level necessary to preclude criticality in the NUHOMS®-32PT DSC, sources that could result in boron dilution, alarms and boron dilution times. Mitigating actions have also been identified, including revisions of procedures and training of personnel to ensure that a boron dilution event is recognized and terminated with sufficient margin to ensure criticality is precluded.

NMC has also provided information pertaining to the conservative assumptions used in the criticality analysis for the NUHOMS®-32PT DSC. For the reasons stated above, NMC concludes that the proposed exemption does not present an undue risk to the health and safety of the public, and is consistent with the common defense and security.

Special circumstances are also present in accordance with 10 CFR 50.12(a)(2)(ii), in that application of the regulation in this particular circumstance is not necessary to achieve its underlying purpose. These special circumstances include the administrative features and design characteristics of the dry fuel storage system that are in place to preclude criticality, and NMC's continued monitoring of radiation levels in the area, in accordance with GDC 63, "Monitoring fuel and waste storage."

7.0 REFERENCES

1. Federal Register Notice, Vol. 69, No. 24, February 5, 2004, p. 5591, Pacific Gas and Electric Company, Diablo Canyon Power Plant, Unit Nos. 1 and 2; Exemption.

2. Federal Register Notice, Vol. 69, No. 113, June 14, 2004, p. 33075, Tennessee Valley Authority, Sequoyah Nuclear Plant, Unit Nos. 1 and 2; Exemption.

3. Letter from Victor Nerses (NRC) to David A. Christian, "Millstone Power Station, Unit No. 2; Exemption From The Requirements of 10 CFR Section 50.68(b)(1) (TAC NO. MC5056)," dated February 15, 2005.

ENCLOSURE 2
ENVIRONMENTAL ASSESSMENT INFORMATION

The following information is provided in support of an environmental assessment and finding of no significant impact for the proposed exemption.

Identification of the Proposed Action

Nuclear Management Company, LLC (NMC) requests an exemption from the requirements of 10 CFR 50.68, "Criticality Accident Requirements," for storage and handling, in the Palisades Nuclear Plant (PNP) spent fuel pool (SFP). The exemption relates to the contents of the Transnuclear NUHOMS®-32PT cask system licensed under 10 CFR Part 72.

The Need for the Proposed Action

Specifically, 10 CFR 50.68(b)(1) sets forth the following requirement that must be met, in lieu of a monitoring system capable of detecting criticality events:

> *"Plant procedures shall prohibit the handling and storage at any one time of more fuel assemblies than have been determined to be safely subcritical under the most adverse moderation conditions feasible by unborated water."*

10 CFR 50.12(a) allows licensees to apply for exemptions, and the Commission to grant exemptions from the requirements of the regulations where the exemptions are authorized by law, will not present an undue risk to the public health and safety, are consistent with the common defense and security, and are not necessary to achieve the underlying purpose of the rule and other conditions are met.

NMC is requesting the proposed exemption from the requirement of 10 CFR 50.68(b)(1) due to a conflict in the regulations. Application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule. A detailed discussion of the special circumstance is contained in Enclosure 1.

Environmental Impacts of the Proposed Action

All activities under consideration, associated with the proposed exemption, occur within a radiological controlled area. The proposed exemption does not involve a change in the types or amounts of effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure as a result of the proposed activities. Therefore, there are no significant radiological environmental impacts associated with the proposed exemption.

With regards to potential non-radiological environmental impacts, NMC has determined that the proposed exemption has no potential to affect any historic sites. It does not affect non-radiological plant effluents, and has no other environmental impact. Therefore, there are no significant non-radiological environmental impacts associated with the proposed exemption.

ENCLOSURE 2
ENVIRONMENTAL ASSESSMENT INFORMATION

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to the proposed exemption, the Commission could consider denial (i.e. the "no-action" alternative). Denial of the exemption would result in no change to the current environmental impacts. NMC considers the "no-action" alternative to impact NMC's ability to provide affordable, competitive, and reliable power since NMC power operations would be impacted in the future.

Alternative Use of Resources

The proposed exemption does not involve the use of any different resources than those previously considered in the Final Addendum to the Final Environmental Statement Related to Operation of the Palisades Nuclear Plant, dated February 1978. Accordingly, the proposed action is not a major federal action significantly affecting the quality of the environment.