10 CFR 50.12

Progress Energy

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United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

REQUEST FOR EXEMPTION FROM
10 CFR 50.68, "CRITICALITY ACCIDENT REQUIREMENTS"

Ladies and Gentlemen:

Pursuant to the provisions of 10 CFR 50.12, "Specific exemptions," Progress Energy Carolinas, Inc., also known as Carolina Power and Light Company, requests an exemption from a requirement specified in 10 CFR 50.68, "Criticality accident requirements," for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2.

As detailed in the attachment, the specific exemption would be from the requirement of 10 CFR 50.68(b)(1), which states, "(b) Each licensee shall comply with the following requirements in lieu of maintaining a monitoring system capable of detecting a criticality as described in 10 CFR 70.24: (1) 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." The exemption would only apply to spent fuel pool activities related to the underwater handling, loading and unloading of the dry shielded canister (DSC) NUHOMS®-24PTH, as described in proposed Amendment No. 8 to 10 CFR 72, Certificate of Compliance No. 1004. Justification for this requested exemption, including an environmental assessment, is provided in the attachment to this letter. Similar exemptions have been granted to at least two other licensees, as specified in the attachment.

The exemption is required to load fuel for the planned dry fuel storage facility at HBRSEP, Unit No. 2. The first DSC loading is scheduled for July 2005. Therefore, it is requested that the exemption be granted by June 15, 2005.

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A001

If you have any questions concerning this matter, please contact Mr. C. T. Baucom at (843) 857-1253.

Sincerely,

Jan F. Lucas
Manager – Support Services – Nuclear

RAC/rac

Attachment

c: NRC Resident Inspector, HBRSEP
Dr. W. D. Travers, NRC, Region II
Mr. C. P. Patel, NRC, NRR

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REQUEST FOR EXEMPTION FROM 10 CFR 50.68(b)(1)

I. Background

In accordance with 10 CFR 50.68, H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, in lieu of maintaining monitors capable of detecting a criticality as described in 10 CFR 70.24, currently meets the requirements of 10 CFR 50.68(b).

The requirements of 10 CFR 50.68(b)(1) state, "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." The HBRSEP, Unit No. 2, spent fuel pool storage rack design, in conjunction with fuel handling procedures, currently ensure that sub-criticality will be maintained, even if the spent fuel pool were filled with unborated water.

However, HBRSEP, Unit No. 2, is currently in the process of installing an Independent Spent Fuel Storage Installation (ISFSI), which is expected to be operational in July 2005. The new ISFSI will use the NUHOMS®-24PTH dry shielded canister (DSC). The DSC will be loaded in the spent fuel pool with 24 fuel assemblies. Spent fuel pool boron limits are established to ensure that sub-criticality is maintained during the loading or unloading of the DSC. However, the design of the DSC is such that sub-criticality cannot be ensured if it is assumed that the DSC is full of unborated water, which is the condition specified by 10 CFR 50.68(b)(1).

Therefore, an exemption from 10 CFR 50.68(b)(1) is being requested to preclude the need to install criticality monitors. This would be a limited exemption, as it would only apply to the spent fuel pool activities related to the underwater handling, loading and unloading of the NUHOMS®-24PTH DSC. HBRSEP, Unit No. 2, currently meets, and will continue to meet, the remaining requirements of 10 CFR 50.68(b). The following provides the justification for the requested exemption. Similar exemptions have been granted by the NRC to at least two other reactor licensees. (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 and Federal Register Notice, Vol. 69, No. 113, June 14, 2004, p. 33075, Tennessee Valley Authority, Sequoyah Nuclear Plant, Unit Nos. 1 and 2; Exemption).

II. Exemption Request

Pursuant to the provisions of 10 CFR 50.12, Progress Energy Carolinas, Inc. (PEC), also known as Carolina Power and Light Company, requests an exemption from a requirement specified in 10 CFR 50.68, "Criticality accident requirements." Specifically, the exemption would be from Paragraph 50.68(b)(1), which states, "(b) Each licensee shall comply with the following requirements in lieu of maintaining a monitoring system capable of detecting a criticality as described in 10 CFR 70.24: (1) 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." The exemption would only apply to spent fuel pool activities related to the underwater handling, loading and unloading of the dry shielded canister (DSC) NUHOMS®-24PTH, as described in proposed Amendment No. 8 to Certificate of Compliance No. 1004 listed in 10 CFR 72.214.

III. Justification

Paragraph 10 CFR 50.12(a) specifies that the Commission may grant exemptions from the requirements of 10 CFR Part 50 when (1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and (2) when special circumstances are present. One of the listed special circumstances is Paragraph 50.12(a)(2)(ii), which states, "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." In an earlier exemption approved for the Diablo Canyon Power Plant, the Nuclear Regulatory Commission staff established five criteria that, if met, satisfy the underlying purpose of 10 CFR 50.68(b)(1), and therefore satisfy the Paragraph 50.12(a)(2)(ii) requirement for special circumstances. A detailed discussion of how these five criteria are met at HBRSEP, Unit No. 2, is provided here:.

Criterion 1 The cask criticality analyses are based on the following conservative assumptions:
a. All fuel assemblies in the cask are unirradiated and at the highest permissible enrichment,
b. Only 75 percent of the Boron-10 in the borated aluminum panel inserts is credited,
c. No credit is taken for fuel-related burnable absorbers, and
d. The cask is assumed to be flooded with moderator at the temperature and density corresponding to optimum moderation.

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 criticality analyses performed for the NUHOMS®-24PTH DSC are described in Section 6 of Appendix P of Revision 8 of the Final Safety Analysis Report (FSAR) 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 assumed credit for the fixed neutron poison in the basket. The use of 90 percent versus 75 percent assumed credit for the fixed neutron poison in the basket is justified based on fabrication tests verifying the presence and uniformity of the neutron absorber. These tests are detailed in Section 9 of Appendix P of the Standardized NUHOMS® FSAR. The criticality analyses also assume that the cask is flooded with moderator at the optimum temperature and density to maximize reactivity of the system. These analyses have been performed to establish the maximum allowed fuel enrichments for which the Technical Specifications specified soluble boron concentration will maintain k_{eff} below an upper subcritical limit (USL) which is less than or equal to 0.95 under conditions of optimum moderation.

Criterion 2 *The licensee's ISFSI Technical Specifications require 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.*

A condition of Certificate of Compliance (CoC) No. 1004 indicates that DSCs authorized by the CoC 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 Part 72.210, subject to the conditions specified by 10 CFR 72.212 and the attached Technical Specifications (meaning Technical Specifications attached to the CoC). The Technical Specifications applicable to the NUHOMS®-24PTH DSC (attached to CoC No. 1004 revisions for proposed Amendment No. 8) contain the following requirements:

"1.2.15c Boron Concentration in the DSC Cavity Water for the 24PTH Design Only

Limit/Specification:

- The DSC cavity shall only be filled with water having a minimum boron concentration which meets the requirements of Table 1-1p, when loading intact fuel. Table 1-1p lists the minimum soluble boron concentration as a function of the fuel assembly class, DSC basket type and the corresponding assembly average initial enrichment values.
- The DSC cavity shall only be filled with water having a minimum boron concentration which meets the requirements of Table 1-1q, when loading damaged fuel. Table 1-1q lists the minimum soluble boron concentration as a function of the fuel assembly class, DSC basket type, the maximum number of damaged fuel assemblies allowed and the corresponding maximum assembly average initial enrichment values.

Applicability: This limit applies only to the NUHOMS®-24PTH design.

Objective: To ensure a subcritical configuration is maintained in the case of accidental loading of the DSC with unirradiated fuel.

Action: If the boron concentration is below the required weight percentage concentration (gm boron/10^6 gm water), add boron and re-sample, and test the concentration until the boron concentration is shown to be greater than that required.

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 24 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 24 hours before flooding the DSC cavity for unloading the fuel assemblies, the dissolved boron concentration in water in the spent pool, and in the water that will be introduced into the DSC cavity, shall be independently determined (two samples analyzed chemically 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 in FSAR Appendix P for loading of the DSC with unirradiated fuel, initial enrichment, and optimum moderation conditions."

These Technical Specifications requirements fully meet the requirements as stated in Criterion 2.

<u>Criterion 3</u> Radiation monitors, as required by General Design Criteria 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.

An Area Radiation Monitor (ARM) is located in the general area of the spent fuel pool. This monitor (R-5) will provide audible and visual warning, both locally and in the control room, of high radiation levels in the spent fuel pool area. The monitor contains a gamma sensitive Geiger-Mueller tube and has an indicating range of 0.1 to 10,000 mR/hr. The monitor alarm setpoint is typically 50 mR/hr. Station procedures specify appropriate safety actions upon a high radiation alarm from R-5, including evacuation of local personnel, determination of cause, and determination of potential low water level in the spent fuel pool.

Additionally, personnel working in the area of the spent fuel pool wear individual, gamma sensitive, electronic alarming dosimeters that will provide an audible alarm should the dose or dose rate exceed pre-established setpoints.

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

The DSC loading procedures will ensure that only the fuel authorized to be stored per the Technical Specifications, and no other special nuclear material (e.g. sources or detectors), will be loaded into the DSC.

Criterion 5 *Sufficient time exists for plant personnel to identify and terminate a boron dilution event prior to achieving a critical boron concentration in the cask. 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 concentration in the cask 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.

Part a – Criticality Analysis

Calculation RNP-M/MECH-1767, "Boron Dilution Criticality Analysis for Robinson Fuel in the NUHOMS®-24PTH (10 CFR 50.68)," was performed to determine the minimum soluble boron concentration required to maintain subcriticality ($k_{eff} < 1.0$) of the NUHOMS®-24PTH DSC, loaded with fuel assemblies that bound HBRSEP, Unit No. 2, fuel designs (Westinghouse 15x15 fuel), following a boron dilution event. Both intact and damaged fuel over the range of soluble boron concentrations permitted for various enrichments and basket types were evaluated. The results for the bounding case indicate that subcriticality ($k_{eff} < 1.0$) is maintained with 73% or more of the minimum soluble boron concentration levels specified in the Technical Specifications for all basket types as a function of initial enrichment.

The criticality analyses performed for the NUHOMS®-24PTH DSC are described in Section 6 of Appendix P of Revision 8 of the Final Safety Analysis Report (FSAR) for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated

Nuclear Fuel. For this boron dilution evaluation, the same methods, models, and assumptions are used. The only changes are that the soluble boron concentration in the various models is reduced for the bounding Westinghouse 15x15 class assembly to determine the maximum soluble boron dilution allowed. The k_{eff} values from the KENO V.a runs are adjusted for uncertainty in the same way as described in the FSAR, such that $k_{eff} = k_{KENO} + 2\sigma$.

The significant assumptions and conservatisms applicable to the criticality calculations for intact fuel for this evaluation include the following:

1. No burnable poisons, such as Gadolinia, Erbia or any other absorber, is accounted for in the fuel.

2. Control Components (CCs) that extend into the active fuel region, such as Burnable Poison Rod Absorbers or Control Rod Assemblies, are conservatively assumed to exhibit neutronic properties of 11B4C. Since the boron is modeled as 100% B-11, there is no significant neutron absorption from any of these CCs, they simply displace borated water in the models.

3. Water density is at optimum moderator density.

4. No credit is taken for fissile depletion due to burnup or fission product poisoning (unirradiated fuel).

5. The lattice average fuel enrichment is modeled as uniform everywhere throughout the assembly. Natural Uranium blankets and axial or radial enrichment zones are modeled as enriched uranium at the lattice average enrichment. A benchmark comparison of an Exxon 15x15 Combustion Engineering fuel assembly with a uniform fuel and one with radial variation in fuel pin enrichment is performed in this calculation for generalization. The results demonstrate that the lattice average uniform enrichment assumption is justified and conservative when compared with variable radial enrichments.

6. All fuel rods are filled with full density fresh water in the pellet/cladding gap. This additional moderation without soluble boron is conservative.

7. Only a 23.23 inch section of the basket with fuel assemblies is explicitly modeled with periodic axial boundary conditions, therefore the model is infinitely long.

8. Only 90% credit is taken for the B10 in the B-Al poison plates in the KENO models.

9. The fuel rods are modeled assuming a stack density of 97.5% theoretical density with no allowance for dishing or chamfer. This assumption conservatively increases the total fuel content in the model.

10. Temperature is at 20°C .

11. All stainless steel is modeled as SS304. The small differences in the composition of the various stainless steels have no effect on the results of the calculation.

12. Poison plates are modeled assuming that the plates are located at the southwest face of the fuel compartment tube. This arrangement is conservative as it reduces the number of fuel assembly faces covered by poison plates (from 52 to 44). Nominal width is used because poison plate width tolerances are expected to have a statistically insignificant effect on reactivity.

13. The cask containment boundary and canister basket structure do not experience any significant distortion under hypothetical accident conditions.

The following are the additional assumptions that are relevant to the damaged fuel assembly calculations:

1. The worst-case gross damage resulting from a cask-drop accident is assumed to be either a single-ended or double-ended rod shear with flooding in borated water. Conservatively, a maximum of 6 inches of fuel is assumed to be uncovered by the poison plates due to shifting of the sheared rods.

2. The maximum fuel enrichment is modeled as uniform everywhere throughout the assembly. Natural Uranium blankets and axial or radial enrichment zones are modeled as enriched uranium.

3. The cases with bare fuel and rubble are not modeled, since replacing the clad with borated water results in an increase in absorption. Hence, damaged fuel cases are modeled with the presence of the clad around the fuel pellet to bound the cases of bare fuel and rubble.

4. The bent or bowed fuel rod cases assume that the fuel is intact, but that the rod pitch is allowed to vary from its nominal fuel rod pitch.

5. The single-ended fuel rod shear cases assume that fuel rods that form one assembly face shear in one place and are displaced to new locations. The fuel pellets are assumed to remain in the fuel rods.

6. The double-ended fuel rod shear cases assume that the fuel rods that form one assembly face shear in two places and the intact fuel rod pieces are separated from the parent fuel rods.

7. To model assemblies with missing or partial fuel rods and damaged or missing grid straps, optimum pitch evaluations with rods removed and added are performed.

Based on these assumptions, as noted above, the results for the bounding case indicate that subcriticality ($k_{eff} < 1.0$) is maintained with 73% or more of the minimum soluble boron concentration levels specified in the Technical Specifications for all basket types as a function of initial enrichment.

Part b – Boron Dilution Analysis

Calculation RNP-M/MECH-1768, "Boron Dilution Time for Robinson Fuel in the NUHOMS®-24PTH (10 CFR 50.68)," was performed to determine the time required to dilute the spent fuel pool (SFP) such that the boron concentration is reduced from the NUHOMS® Technical Specifications required concentration (maintaining $K_{eff} \leq 0.95$) to a just subcritical concentration ($K_{eff} \leq 1.0$) for fuel loaded into a NUHOMS®-24PTH DSC.

The following assumptions were made:

1. All unborated water introduced from any uncontrolled dilution source instantaneously mixes with the water in the SFP (i.e., no unborated water is lost prior to its mixing with borated water). This is conservative because the unborated water pouring into the top of the pool would be predominantly included in the water spilling over the sides of the pool.
2. The SFP is at the low level alarm setpoint, including uncertainties for the initiation of a dilution. This will require more time to reach the high alarm, thus reducing the time to take action.
3. The volume of water in the DSC will maintain the same boron concentration as the rest of the SFP. The maximum flowrate assumes the fire protection line catastrophically fails and dumps water onto the floor which then spills into the SFP.

The general equation for boron dilution is:

$$C_t = C_0 e^{-Ft/V}$$

where,

C_t is the boron concentration at time t,
C_0 is the initial boron concentration,

V is the volume of water in the pool, and
F is the flowrate of unborated water into the pool

For convenience, the above equation may be re-arranged to permit calculating the time required to dilute the soluble boron from its initial concentration to a specified minimum concentration:

$$t = (V/F) * \ln (C_0/C_t)$$

The volume of water in the SFP is 240,000 gallons. In the criticality analysis discussed in Part a, for the limiting case, the boron concentration would be reduced by a factor of 0.73 from the Technical Specifications required concentration at the point when k_{eff} approaches one. This provides a bounding C_0/C_t ratio of 1.37 for all allowed enrichments.

An analysis was performed of the potential dilution sources of SFP water. The potential dilution flowrates include an assumed 2 gpm from small failures or mis-aligned valves that could possibly occur in the normal soluble boron control system or related systems. A second scenario involves the failure of the 2 inch demineralized water header. This would provide approximately 103 gpm (pump runout flowrate) of unborated water into the SFP. The worst case (maximum dilution flowrate) event involves the rupture of a fire protection system header, allowing a flowrate of up to 1330 gpm of unborated water into the SFP.

Using these values, the following times are determined:

Dilution Flowrate	Time to Dilute	Gallons of Water Added
2 gpm	26 days	75,530
103 gpm	755 minutes	75,530
1330 gpm	56.8 minutes	75,530

Part c – Alarms and Indications

For the assumed small leaks at 2 gpm, such dilution might not be immediately detected. This rate may be comparable to normal losses and therefore no level alarms would occur. However, the calculated time to reach the critical boron concentration is 26 days. When fuel is loaded in the DSC in the SFP, boron analyses of the SFP water are required at least once every 48 hours per the Technical Specifications. Therefore, the reduction in boron concentration would be detected many days before the maximum dilution is reached.

For the maximum accident flowrate of 1330 gpm, upon the initial break, the fire protection system header pressure would drop to the auto start setpoint of the fire protection pumps. The start is accompanied with an alarm at the Fire Alarm Console (FAC). The annunciator response is to immediately dispatch the fire protection auxiliary operator to investigate the cause of the alarm. Approximately 6 minutes into the event, a spent fuel pool high level alarm (37 feet, 5/8 inches + 1 inch calibration tolerance) would be received in the main control room, assuming that the spent fuel pool level started at the low alarm (36 feet, 2 ½ inches - 1 inch calibration tolerance). The first action specified in the annunciator response procedure (APP-036, "Auxiliary Annunciator") for the SFP high level alarm is to dispatch an operator to check SFP level and determine the cause of the alarm. This will provide sufficient time to isolate the ruptured fire protection header prior to the calculated 56.8 minutes. For the 103 gpm demineralized water pipe rupture event, there would be no alarm from the demineralized water system. However, approximately 10 hours would be available to isolate the leak once the SFP high level alarm was received. The procedures do allow for continued operation with the SFP high level alarm illuminated, in which case increasing levels would not be alarmed. If that is the case, the procedures require that the SFP level be monitored at least once per five hours. The procedures will be revised to specify that if the SFP high level alarm is illuminated, and there is fuel in the DSC in the SFP, then continuous coverage to monitor SFP level will be required.

Part d – Plant Controls to Minimize Boron Dilution Potential

The postulated large flow boron dilution events would require the unexpected rupture of piping. As discussed in Part c, procedures will require continuous occupancy if alarms are not available to warn of such an event, and will specify the need for prompt immediate actions to isolate the break. Procedures require routine SFP water boron analyses (maximum 48 hour intervals) to ensure any slow dilution processes are recognized in time.

Part e – Training and Procedures

Current SFP fuel storage requirements (without consideration of the DSC) specify controls to ensure boron concentrations remain within Technical Specifications limits. Therefore, procedural controls related to SFP water level and boron concentration have existed for many years and are part of initial operator training and requalification training. Training is currently being developed to address the operation of the new dry fuel storage facility and loading of the NUHOMS®-24PTH DSC. This training will highlight the boron requirements for loading the DSC, the potential for criticality should boron levels decrease, and the need for timely mitigating activities if a boron dilution event occurs. Operators and other personnel involved in the dry fuel storage implementation will receive this new training prior to loading of the first DSC. Additionally, before each DSC loading evolution, the crew involved in performance of the work will receive a pre-job briefing, where the need for boron control will be discussed.

Conclusion

Based on the analysis of the five criteria specified by the NRC and discussed above, it is concluded that for HBRSEP, Unit No. 2, the underlying purpose of 10 CFR 50.68(b)(1) is met. Therefore, the requirement for special circumstances is also met.

IV. 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

Progress Energy Carolinas, Inc. (PEC), also known as Carolina Power and Light Company, requests an exemption from the requirements of 10 CFR 50.68, "Criticality accident requirements," for storage and handling in the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, spent fuel pool. The exemption relates to the loading or unloading of the NUHOMS®-24PTH dry shielded canister (DSC) that is expected to be licensed under 10 CFR Part 72. Specifically, the exemption is to the requirements of 10 CFR 50.68(b)(l).

The Need for the Proposed Action

10 CFR 50.68(b)(l) 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."* Due to the conservative manner in which 10 CFR Part 72 criticality analyses are performed (e.g., no credit is taken for fuel burnup), the design basis criticality analyses for the loading/unloading of the NUHOMS®-24PTH DSC requires borated water to ensure subcriticality. Therefore, an exemption is required to 10 CFR 50.68(b)(l) to allow for the loading/unloading of the DSC and implementation of plans for dry fuel storage at HBRSEP, Unit No. 2. Dry fuel storage is required at HBRSEP, Unit No. 2, to allow for full core offload capability following the 2005 scheduled refueling outage and eventually to allow for the ability to refuel the reactor over the licensed plant life.

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 when special circumstances are met. PEC has concluded that these conditions for granting an exemption are met and has provided the justification in this submittal.

Environmental Impacts of the Proposed Action

The activities under consideration associated with the exemption occur within a radiological controlled area. PEC has determined that the requested exemption will not significantly increase the probability or consequences of accidents, that no changes are being made in the types or amounts of effluents that may be released off site, and that 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, PEC 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 requested exemption.

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to the requested 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. PEC considers the "no-action" alternative to impact PEC's ability to provide safe, affordable, competitive, and reliable power.

Alternative Use of Resources

The requested exemption does not involve the use of any different resources than those previously considered in the Final Environmental Statement for HBRSEP, Unit No. 2, dated April 1975. Accordingly, the proposed action is not a major federal action significantly affecting the quality of the environment.

V. Conclusion

10 CFR 50.12(a) states that the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50 when (1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and (2) when special circumstances are present. In an earlier exemption approved for Diablo Canyon Nuclear Power Plant, the NRC staff established five criteria that, if met, satisfy the underlying intent of 10 CFR 50.68(b)(1), and satisfy the Paragraph 50.12(a)(2)(ii) requirement for special circumstances. PEC has provided within this submittal a detailed

discussion of how these five criteria are met. PEC believes the requested exemption is clearly authorized by law and is consistent with the common defense and security. In addition, PEC believes that this request meets the criteria established by the NRC staff for satisfying the underlying intent of 10 CFR 50.68(b)(1) as detailed in this attachment, and therefore granting the exemption will not present an undue risk to public health or safety.