Progress Energy

Serial: RNP-RA/05-0071

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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" – SUPPLEMENTAL INFORMATION

Ladies and Gentlemen:

In a letter dated February 22, 2005, supplemented by letters dated May 10, 2005, and July 6, 2005, Progress Energy Carolinas, Inc. (PEC), also known as Carolina Power and Light Company, requested an exemption from specific requirements of 10 CFR 50.68, "Criticality accident requirements," for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. This letter provides supplemental information in support of the NRC review of this exemption request.

In telephone discussion with NRC staff reviewers for this exemption request on July 13, 2005, it was determined that additional information pertaining to Spent Fuel Pool (SFP) level indication was needed. Specifically, detailed information pertaining to the local SFP level indication that would be available to personnel stationed in the area of the SFP was requested.

As stated in the letter dated July 6, 2005, upon receipt of an SFP Hi Level alarm, the immediate action would be to dispatch an operator to the area to determine the cause. A spill of any significance would be obvious and immediate actions would be taken to isolate the spill.

The letter dated July 6, 2005, also stated that the following requirement has been added to the cask loading and unloading procedures, "If APP-036-B5, SPENT FUEL PIT HI LEVEL, is illuminated **OR** inoperable with any fuel loaded in the DSC, continuous coverage shall be present in the Spent Fuel Pit. The coverage shall be maintained under these conditions until the loaded DSC is removed from the pool. The individual providing the coverage shall notify the Control Room in the event of an inadvertent dilution of the Spent Fuel Pool to help mitigate the consequences of the event, such as could occur during a Fire Water or Demin. Water pipe break in the Spent Fuel Pit."

A local level indicator is available in the SFP. The personnel providing continuous coverage when the SFP Hi Level Alarm is illuminated or inoperable can use this indication to detect possible dilution of the SFP. The monitoring of SFP level will be formally controlled by the use of an hourly log, which will provide early indication of any unexpected level increase in the SFP.

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The hourly log readings will be taken when the SFP Hi Level Alarm is illuminated or inoperable with any fuel loaded in the dry shielded canister (DSC) in the SFP.

If an uncontrolled dilution is determined to be in progress, the dry cask loading/unloading operations will be suspended and placed in a safe condition until the source of the dilution is determined and isolated.

The potential sources of dilution to the SFP have been considered. The highest uncontrolled dilution flow rate was determined to be the fire protection header on the SFP floor for fire hose station 104. As stated in the letter dated July 6, 2005, this fire protection header will be isolated during DSC loading and unloading to preclude this as a source of uncontrolled dilution to the SFP. The DSC loading and unloading procedures have been revised to include a requirement to close the fire protection system valve (FP-71) prior to placing fuel in the DSC during loading or prior to placing the loaded DSC back in the SFP during unloading. This change has resulted in the most limiting uncontrolled dilution source being identified as the assumed break of a two inch demineralized water header, which could cause a dilution flow of approximately 103 gpm. No other single source has been identified that would exceed this dilution rate. Therefore, the time to reach a critical boron concentration, as provided in the July 6, 2005, letter, is estimated to be 755 minutes. The 755 minute dilution time is sufficient to allow identification and termination of any potential source of dilution.

The supplemental information provided in this letter is intended to provide additional justification for the proposed exemption request. The proposed exemption request, including this supplemental information, continues to meet the applicable criteria of 10 CFR 50.12, and the Environmental Assessment Information provided by PEC in the February 22, 2005, letter remains valid.

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

JFL/cac

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