

August 18, 2005

Mr. William Levis
Senior Vice President & Chief Nuclear Officer
PSEG Nuclear LLC-X04
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - REQUEST FOR ADDITIONAL
INFORMATION REGARDING REQUEST FOR CHANGE TO TECHNICAL
SPECIFICATIONS, IMPLEMENTATION OF ARTS/MELLLA OPERATING
DOMAIN (TAC NO. MC3390)

Dear Mr. Levis:

By letter dated June 7, 2004, PSEG Nuclear, LLC (PSEG) submitted license amendment request LCR H04-01 for the Hope Creek Generating Station (Hope Creek), seeking Nuclear Regulatory Commission (NRC) approval of proposed changes to the Hope Creek Technical Specifications. Specifically, the proposed changes would allow an expanded operating domain resulting from implementation of Average Power Range Monitor/Rod Block Monitor/Technical Specifications/Maximum Extended Load Line Limit Analyses (ARTS/MELLLA). Additionally, the proposed changes would revise the methods used to evaluate the annulus pressurization and jet loads resulting from the postulated recirculation suction line break.

In your submittal, you stated that PSEG would submit fuel-dependent evaluations, which were necessary for completion of the review, by September 30, 2004. By letter dated September 30, 2004, you informed the NRC that the fuel-dependent evaluations would not be submitted until November 30, 2004. By letter dated February 18, 2005, you submitted the aforementioned fuel dependent evaluations.

Based on information submitted by PSEG, to date, the NRC staff has determined that additional information is necessary in order for the staff to complete its review. The NRC staff requests that you provide responses to the enclosed questions within 60 days, in order for the NRC to

- 2 -

complete its review in a timely manner. The enclosed questions were discussed with Mr. Paul Duke on August 9, 2005. As agreed during that discussion, the NRC has deleted the originally-submitted Question 5, which was related to credit for the rod block monitor, because it was determined that the issue is sufficiently covered in the application.

Sincerely,

/RA/

Stewart N. Bailey, Sr. Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-354

cc w/encls: See next page

complete its review in a timely manner. The enclosed questions were discussed with Mr. Paul Duke on August 9, 2005. As agreed during that discussion, the NRC has deleted the originally-submitted Question 5, which was related to credit for the rod block monitor, because it was determined that the issue is sufficiently covered in the application.

Sincerely,

/RA/

Stewart N. Bailey, Sr. Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-354

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	DRoberts	ECobey, RGN-I
ACRS	DCollins	CRaynor
OGC	PDI-2 Reading	EThrom
GMiller	FAkstulewicz	MRazzaque
ZAbdullahi		

ADAMS ACCESSION NUMBER: ML052300498

OFFICE	PDI-2/PE	PDI-2/PM	PDI-2/LA	SRXB/SC	PDI-2/SC
NAME	GMiller	SBailey	CRaynor	FAkstulewicz	VNerses for DRoberts
DATE	8/18/05	8/18/05	8/17/05	08/10/05	8/18/05

OFFICIAL RECORD COPY

Hope Creek Generating Station

cc:

Mr. Michael P. Gallagher
Vice President - Eng/Tech Support
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Michael Brothers
Vice President - Nuclear Assessments
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. George P. Barnes
Site Vice President - Hope Creek
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. George H. Gellrich
Plant Support Manager
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Michael J. Massaro
Plant Manager - Hope Creek
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Ms. Christina L. Perino
Director - Regulatory Assurance
PSEG Nuclear - N21
P.O. Box 236
Hancocks Bridge, NJ 08038

Jeffrie J. Keenan, Esquire
PSEG Nuclear - N21
P.O. Box 236
Hancocks Bridge, NJ 08038

Ms. R. A. Kankus
Joint Owner Affairs
Exelon Generation Company, LLC
Nuclear Group Headquarters KSA1-E
200 Exelon Way
Kennett Square, PA 19348

Lower Alloways Creek Township
c/o Mary O. Henderson, Clerk
Municipal Building, P.O. Box 157
Hancocks Bridge, NJ 08038

Dr. Jill Lipoti, Asst. Director
Radiation Protection Programs
NJ Department of Environmental
Protection and Energy
CN 415
Trenton, NJ 08625-0415

Brian Beam
Board of Public Utilities
2 Gateway Center, Tenth Floor
Newark, NJ 07102

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Senior Resident Inspector
Hope Creek Generating Station
U.S. Nuclear Regulatory Commission
Drawer 0509
Hancocks Bridge, NJ 08038

REQUEST FOR ADDITIONAL INFORMATION
REGARDING AMENDMENT REQUEST TO
UTILIZE ARTS/MELLLA OPERATING DOMAIN
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

By letter dated June 7, 2004, PSEG Nuclear, LLC (PSEG) submitted license amendment request LCR H04-01 for the Hope Creek Generating Station (Hope Creek), seeking Nuclear Regulatory Commission (NRC) approval of proposed changes to the Hope Creek Technical Specifications. Specifically, the proposed changes would allow an expanded operating domain resulting from implementation of Average Power Range Monitor/Rod Block Monitor/Technical Specifications/Maximum Extended Load Line Limit Analysis (ARTS/MELLLA). Additionally, the proposed changes would revise the methods used to evaluate annulus pressurization and jet loads resulting from the postulated recirculation suction line break. By letter dated February 18, 2005, PSEG submitted fuel dependent evaluations in support of the license change request. The NRC staff has been reviewing your submittal and has determined that the following additional information is required to complete our review:

1. It was stated in the submittal for fuel-dependent analysis (NEDC-33066P, Rev. 2) that in general, the limiting anticipated operational occurrences (AOOs) minimum critical power ratio (MCPR) calculation and the reactor vessel overpressure protection analysis are fuel dependent. These analyses are based on, or are applicable to, the reference loading pattern for Cycle 13. Hope Creek is currently operating with approximately 600 irradiated (for one to two previous cycles) non-GE14 fuel assemblies (SVEA-96+) in the core and has loaded 164 fresh GE14 fuel in the Cycle 13 core. For the fuel-dependent evaluations of the limiting AOOs, the licensee's analyses indicate that the original licensed MCPR (OLMCPR) for operation in the MELLLA region remains bounded by the generic power and flow-dependent limits. The analyses results also indicate that performance in the MELLLA region is within allowable design limits for over-pressure protection, loss-of-coolant accidents (LOCAs), and Anticipated Transient Without Scram (ATWS) licensing criteria.

Describe, in detail, how different fuel designs (for the case of the current loading and for planned future loadings) can be combined to perform a mixed-core analysis and still be able to obtain a bounding fuel-dependent analyses that demonstrates, at MELLLA conditions, that the core and fuel performance will satisfy all safety and regulatory requirements. As a part of this discussion, the response should include:

- a. A discussion of the neutronic and thermal-hydraulic compatibility of the different vendor's fuel loaded into the core.
- b. A discussion on which fuel-type (SVEA-96+ or GE14) is more limiting from the standpoint of AOOs, over-pressure protection, LOCA, ATWS, and the thermal-hydraulic stability, including what makes it the limiting fuel-type.

2. In order to develop the plant-specific and cycle-specific DIVOM curve for Cycle 13, did you consider the state points for operation within the MELLLA domain of the power-flow map, and does the MELLLA operation make the slope of the DIVOM curve more conservative (steeper) compared to the existing ELLLA domain?
3. It is the NRC staff's understanding that the vendor's methodologies were approved only to apply to their respective fuel designs. Demonstrate that the DIVOM curve is bounding when the core is loaded with different fuel designs, supplied by different fuel vendors.
4. In Table 4-1 of NEDC-33066P, Rev. 2, the OLMCPR values from the rod withdrawal error event were shown for various power/flow combination, except for 100% of current licensed thermal power and 76% rated core flow. This is a state point on the modified power/flow map for MELLLA; however, it falls outside the current operating domain. The NRC staff believes that this state point has the potential to be limiting for the OLMCPR. Provide an evaluation of the OLMCPR at this point or a justification for why it is not considered limiting.
5. DELETED
6. Describe your training program for the operators in preparation for implementing the ARTS/MELLLA operation at Hope Creek.