May 21, 1986

Docket No. 50-219

Mr. P. B. Fiedler
Vice President and Director
Oyster Creek Nuclear Generating Station
Post Office Box 388
Forked River, New Jersey 08731

Dear Mr. Fiedler:

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SUBJECT: OYSTER CREEK LATTICE PHYSICS RELOAD REPORT TR/020 - REQUEST FOR ADDITIONAL INFORMATION (TAC 60339)

Re: Oyster Creek Nuclear Generating Station

In a letter dated November 25, 1985, you requested that the staff review for approval Topical Report 020, Revision 0, entitled "Methods for the Analysis of Boiling Water Reactor Lattice Physics." This topical report is for use in Oyster Creek reload analyses. The staff is reviewing the report and finds that it needs additional information to complete its review. Questions detailing this needed information are enclosed and must be responded to before the review can continue.

You are requested to provide the additional information by July 15, 1986, so that the staff may complete its evaluation by the date you requested in your letter (i.e., October 1, 1986). A telecopy of the enclosed questions was sent to Mr. M. Laggart of GPU Nuclear (GPUN) and discussed by telephone with him on May 13, 1986. The response date has been agreed to by Mr. Laggart. If it is desired, a meeting with the staff will be arranged on a mutually convenient schedule to discuss the enclosed questions.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Jack N. Donohew, Jr., Project Manager
BWR Project Directorate #1
Division of BWR Licensing

Enclosure:
Request for Additional Information

cc w/enclosure:
See next page

OFC	:DBL:PD#1	:DBL:PD#1	:DBL:PD#1	:	:	:	:
NAME	:CJamerson	:JDonohew	:JZwolinski	:	:	:	:
DATE	:5/20/86	:5/21/86	:5/21/86	:	:	:	:

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Mr. P. B. Fiedler
Oyster Creek Nuclear Generating Station

Oyster Creek Nuclear
Generating Station

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ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION FOR

REVIEW OF TOPICAL REPORT TR 020 (REV. 0) FOR OYSTER CREEK

The selection of a number of parameters under the control of the user can have a significant impact on the accuracy of the results produced by CPM/MICBURN. These include the number of groups and group breakpoints for the macrogroup and 2-D assembly calculation, the number of mesh intervals per region (e.g., fuel pin-cell, channel box, water gaps,) burnup steps, various numerical and iteration parameters.

1. What values are used for these parameters in the normal "production" mode, and what values were used in the GPU and EPRI-Studsvik bench-marking results quoted in the report? Comment on what impact any differences might have on the relevance of the quoted benchmark accuracies to results produced in the normal mode.

2. What is the basis for determining when selected input parameters (including default values) and other aspects of modelling are adequate?

3. How were calculations performed for the hexagonal TRX lattices if CPM cannot handle this geometry? What is the impact of any approximations made in order to perform these calculations?

4. The seven Monte Carlo-CPM k_∞ comparisons given in Table 3.2 indicate that in all but one case, the CPM k_∞s are outside the $\pm 3\sigma$ band on the Monte Carlo results (assuming that the quoted uncertainties are 1σ). While it is true that the agreement is better than -1.5%, comment on the value of these comparisons as a demonstration of the performance of CPM. Explain why this agreement is poorer than the k effective comparisons of Tables 3.4 and 3.5 which are from EPRI benchmarking of CPM.

5. The agreement between some of the gamma scans for Hatch-1 and Oyster Creek bundles and CPM is quite poor. Describe any evidence to support the claims made in the report that this is due to core flux tilts and control rod effects. For example, discuss whether or not the spatial distribution of the errors is consistent with these arguments.

6. Describe any final evaluated uncertainties relating to the performance of CPM for the situations where it is used, e.g., pin-wise power distribution accurate to ±x%.

7. Describe any changes which have been made by GPU to the CPM code and/or CPMLIB3 implied in the EPRI-ARMP benchmarking described in Part 1, Chapter 5 of the ARMP documentation, and discuss the effect of these changes on the benchmarking.

8. Discuss mechanisms, if any, by which GPU is notified of errors, problems, etc., associated with CPM and its use.