October 22, 1985

Mr. J. F. Klapproth
Principal Licensing Engineer
Nuclear Technologies and Fuel Division
General Electric Company
175 Curtner Avenue
San Jose, California 95125

Dear Mr. Klapproth:

SUBJECT: ACCEPTANCE OF ADDENDUM TO LICENSING TOPICAL REPORT NEDE-22290, SUPPLEMENT 2, "ADVANCED LONGER-LIFE CONTROL ROD" (ALLCR)

On July 1, 1985 the NRC found the subject topical report to be acceptable for referencing in license applications to the extent specified and under the limitations delineated in the report and the associated NRC evaluation.

By letter dated July 31, 1985, the General Electric Company (GE), requested NRC's acceptance of its position that replacement of all-B_4C control rod designs with controlled stainless steel tubing material are exempt from the requirements of IE Bulletin 79-26, with the exception of control rod life tracking. Such an exemption has been granted for the ALLCR assembly. The enclosed evaluation addendum defines the basis for our acceptance.

We do not intend to repeat our review of the matters described in the report and the addendum and found acceptable when the report and its addendum are referenced in license applications, except to assure that the material presented is applicable to the specific plant involved. Our acceptance applies only to the matters described in the report and the addendum.

In accordance with procedures established in NUREG-0390, it is requested that GE publish accepted versions of this report, proprietary and non-proprietary, incorporating the addendum, within three months of receipt of this letter. The accepted versions shall incorporate this letter and the enclosed evaluation between the title page and the abstract. The accepted versions shall include an -A (designating accepted) following the report identification symbol.

Should our criteria or regulations change such that our conclusions as to the acceptability of the report are invalidated, GE and/or the applicants referencing the topical report will be expected to revise and resubmit their respective documentation, or submit justification for the continued effective applicability of the topical report without revision of their respective documentation.

Sincerely,

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Original signed by
Cecil O. Thomas, Chief
Standardization and Special
Projects Branch
Division of Licensing

Enclosure:
As stated

RD-8.2
GE

DL:SSPB	DL:SSPB	DL:SSPB	DL:SSPB
PNoonan:ac	HBernard	HBerkow	CThomas
10/22/85	10/22/85	10/22/85	10/22/85

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Sincerely,

Cecil O. Thomas

Cecil O. Thomas, Chief
Standardization and Special
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Enclosure:
As stated

ENCLOSURE

ADDENDUM TO ALLCR TOPICAL REPORT EVALUATION

IE Bulletin 79-26 was issued in response to instances of loss of boron from control rods due to tube cracking. It required that a record be kept of the current B-10 depletion averaged over the upper quarter of the rod for every control rod, that a program be established to replace control blades having greater than 34 percent B-10 depletion averaged over the upper quarter of the blade (including an allowance for boron loss), that shutdown margin measurements made at refueling outages should have an allowance for any predicted boron loss during the succeeding cycle, and that a destructive examination be performed of a highly exposed all-B_4C rod.

In order to address the root cause of the boron loss phenomenon tube cracking GE performed an investigation and, as a result, has begun replacing the tubing in all-B_4C rods with a high purity controlled stainless steel alloy which is not susceptible to cracking. They conclude that the requirements of bulletin 79-26 need no longer be met for all-B_4C rods with the controlled stainless steel tubing. We concur with that conclusion. Our concurrence is based on the following:

1. The exposure of each control rod will still be tracked to determine when a 10 percent reduction in rod worth occurs.

2. Boron loss from the control blade due to cracked tubing is not expected to occur. An extensive surveillance program is being carried out on the B_4C rods in GE Hybrid I control blades. These blades are being irradiated as part of a lead test program in the Peach Bottom reactor to monitor the susceptibility of these rods to cracking (see NEDE-22290-A for details and the staff's evaluation).

3. Shutdown margin determinations are required by plant Technical Specifications during startup after each refueling and will continue to be performed. However, allowance for boron loss will not be required. The requirement to replace rods before exceeding a 10 percent reduction in relative worth will assure adequate protection.

4. A long term surveillance program will be conducted on rods containing the new tubing. This will consist of a visual examination after the sixth year and for every other cycle after that. This will enhance the likelihood that incipient problems will be discovered.