GENERAL ELECTRIC COMPANY

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ATOMIC PRODUCTS DIVISION

ATOMIC POWER EQUIPMENT DEPARTMENT

VALLECITOS ATOMIC LABORATORY

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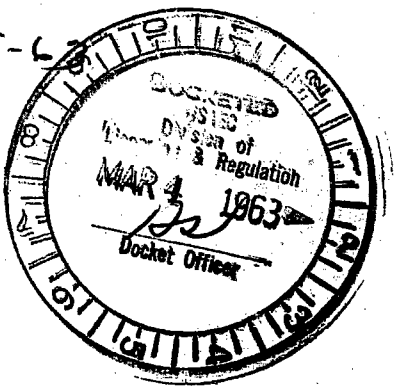
February 21, 1963 — Postmarked 2-28-63



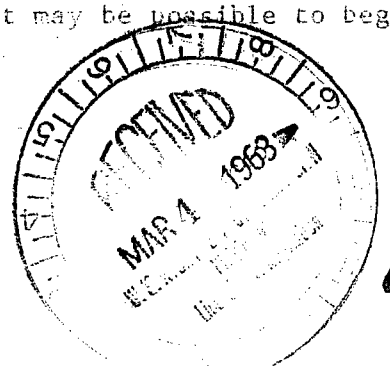
Mr. Robert L. Lowenstein, Director
Division of Licensing and Regulation
U. S. Atomic Energy Commission
Washington 25, D.C.

Dear Mr. Lowenstein:

An outline of control rod development for the General Electric Test Reactor (GETR) has been reported in our letters of September 7 and November 8, 1962, and further detailed reviews have been made in the course of discussions with your staff at Germantown and Vallecitos. In addition, regular contacts were maintained with the local Compliance Division Inspectors. The purpose of this letter is to inform you of the current status and expected progress of the new (Mark II) control rod project.

In our letter of September 7, we indicated that the Mark II control rod design and fabrication would be complete in time for an installation date of March, 1963. It was anticipated that reactor operation with the original (Mark I) control rods would be possible until that time. Further difficulties with the Mark I poison sections were experienced in October of 1962 and it was then concluded that further operation of the original poison sections was not feasible. A decision was reached to discontinue further operation of the reactor until new poison sections essentially similar to the Mark I design could be fabricated. With the concurrence of your staff, these sections were installed on November 26. The performance of these poison sections has been satisfactory in every respect, as demonstrated by actual operation and visual inspections conducted since that time.

It now appears that the diversion of engineering design personnel resulting from design and fabrication of the interim poison sections, and current schedules for the availability of manufacturing facilities to fabricate the new control rods will preclude the possibility of completing the program according to the originally estimated date. The present schedule indicates that it is necessary to extend the initial installation date to the scheduled reactor shutdown of June 9, 1963, although it may be possible to begin during the shutdown of May 5.



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The new control rods are sufficiently different that it appears desirable to program the installation in a manner that will allow us to obtain working experience and to evaluate rod performance before complete dependence is placed on Mark II rod shut-down capability. After rod worth determinations, which will be conducted during the June 9 shutdown, it is planned to install the rods in a sequence consisting of two in corner positions during the shutdown of June 9, two in the remaining corner positions during the shutdown of July 14, and the final center rods during the shutdown of August 18.

We have studied the performance of the original fifteen poison sections for the purpose of determining if the Mark I poison sections which remain in service until August 18 will be adversely affected by the additional five months exposure beyond the original March change-out date. The results of this study are in good agreement with the literature on radiation damage to the material, and it was concluded that the additional operating time will not significantly affect the reliability of these poison sections. As a further safeguards measure, the sections will all be inspected during the March 31 shutdown, and every shutdown thereafter until replaced by the Mark II control rods.

It is our intention to retain the Mark I control rods until the new design is thoroughly proven. Several of these may then be retained for possible further use as spares. If it is found necessary to re-use the Mark I rods as spares, due consideration will be given to the question of allowable maximum exposures.

The new control rod designs are now essentially complete. Drawings will be reviewed with AEC personnel during the week of February 18, and a report describing the new design is in preparation, to be submitted to your office shortly thereafter. The appropriate information for licensing will be submitted as Amendment No. 17 to the license application for GETR.

Sincerely,

George White, General Manager
Atomic Power Equipment Department

KS:pc

cc: Region V, Division of Compliance
U. S. Atomic Energy Commission