GE Nuclear Energy

General Electric Company
Vallecitos Nuclear Center
P.O. Box 460, Vallecitos Road
Pleasanton, CA 94566

May 8, 1992

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

Reference: License R-33, Docket 50-73

Gentlemen:

The Vallecitos Nuclear Center (VNC) requests a change to Section 2.B.(3) of License R-33 which will increase the amount of contained byproduct material permitted for use at the Nuclear Test Reactor (NTR) from 200 curies to 2,000 curies. A full description of the requested change and a safety analysis are included in the attachment to this letter.

If you have any questions concerning this requested change, please contact me at (510) 862-4330. Thank you.

Sincerely,

G. E. Cunningham
Senior Licensing Engineer

/ca

Attachments

cc: M. M. Mendonca
T. S. Michaels

A020
1/1

AFFIRMATION

PROPOSED AMENDMENTS TO LICENSE R-33

The General Electric Company hereby submits a proposed amendment to License R-33. To the best of my knowledge and belief, the information contained herein is accurate.

R. W. Darmitzel, Manager
Irradiation Processing

SUBMITTED AND SWORN BEFORE ME THIS 8th DAY OF MAY, 1992.

Christine Ariizumi, NOTARY PUBLIC, IN AND FOR THE COUNTY OF ALAMEDA, STATE OF CALIFORNIA.

OFFICIAL SEAL
CHRISTINE ARIIZUMI
NOTARY PUBLIC - CALIFORNIA
ALAMEDA COUNTY
My comm. expires APR 20, 1993

Proposed Amendment to License R-33

I. Proposed Change

The Vallecitos Nuclear Center (VNC) requests that Section 2.B (3) of License R-33 be modified to read:

> "....Licensing of Byproduct Material, (1) to receive, possess and use 2,000 curies of either activated solids as contained in but not limited to such items as encapsulating materials, structural materials and irradiated components or as contained materials, (2) any byproduct....".

II. Safety Analysis

References:
(1) "Environmental Impact Appraisal, General Electric Nuclear Test Reactor"; August 3, 1979.
(2) "General Electric Nuclear Test Reactor Safety Analysis Report", NEDO-12727; April, 1981.
(3) Safety Evaluation Report, NUREG-1069; September, 1984.
(4) "Calculated Dose Rate at 3 Feet From an NTR Fuel Element, Revision 1"; August 29, 1990.

The bases for this request are: (1) the material is not in a readily dispersible form; and (2) the crushing of the material could not result in consequences more severe than those already postulated for the worst accident scenario for the NTR (i.e., the crushing of the core).

The EIA for the NTR submitted on August 3, 1979, notes that the Commission has previously determined that accidents including the largest core damage and fission product release considered possible result in doses of only a fraction of 10 CFR Part 100 guidelines and are considered negligible with respect to the environment (Memo, "Environmental Considerations Regarding the Licensing of Research Reactors and Critical Facilities", C. R. Muller to D. Skovholt; January 23, 1974).

The SAR for the reactor (Ref. 2) as modified (VNC's June 19, 1984, response to Question 24 of the NRC's letter of June 1, 198 demonstrates that the crushing of the entire NTR core does not result in any significant release of fission products. This is confirmed in Section 14.7 of the SER (Ref. 3).

The most recent calculations of the fission product inventory, including volatiles, which were made to demonstrate that th NTR fuel is self-protecting (Ref. 4) show a core content of 378,000 curies at shutdown and 56,220 curies after 24 hours.

The requested material will be in nonreadily dispersible form as is now required by License R-33. These materials are taken to the NTR for neutron radiography. By the nature of the neutron radiography process, the only credible accident would be some sort of crushing during handling.

III. Conclusion

If the crushing of the reactor core with its large inventory of fission products will not result in the release of significant quantities of radioactive material to unrestricted areas, any similar scenario with the requested 2,000 Ci in the forms permitted by License R-33 cannot result in significant releases.