

## NUCLEAR REGULATORY COMMISSION WASHINGTON, D.C. 20555

# SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

## SUPPORTING AMENDMENT NO. 20 TO

## FACILITY OP'RATING LICENSE NO. R-33

#### DOCKET NO. 50-73

### GENERAL ELECTRIC COMPANY

#### 1.0 INTRODUCTION

By letter dated May 8, 1992, as supplemented on July 22, 1992, the General Electric Company (the licensee) requested an increase in the amount of contained byproduct material from 200 curies to 2,000 curies at the Nuclear Test Reactor (NTR).

### 2.0 EVALUATION

The licenses's May 8, 1992, submittal stated that:

The bases for the 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 aiready postulated for the worst accident scenario for the NTR (i.e., the crushing of the core).

With regard to the byproduct material not being in a readily dispersible form the licensee's supplemental information by letter of July 22, 1992, verified and requested a change to the subject license condition to ensure that byproduct material will not be in a readily dispersible form. Therefore, the proposed license condition ensures that the additional material requested by the increase from 200 curies to 2,000 curies will not be a major contributor to airborne radiological exposures at the facility or at the site boundary.

With regard to the increased limit on byproduct material not resulting in a more severe accident scenario than previously analyzed for the NTR, the licensee referred to the "General Electric Nuclear Test Reactor Safety Analysis Report," NEDO-12727, April 1981. This safety analysis report anal, red a spectrum of operational occurrences and accidents that included crushing of the reactor core. In the March 9, 1992, submittal, the licensee indicated that the reactor core radioactive inventory was substantially greater than the requested byproduct inventory, and that the safety analysis results were acceptable. Further, the licensee referred to the NRC staff's Environmental Assessment enclosed with Amendment No. 18 to Facility Operating License No. R-33 of December \_0, 1984, which found that:

the expected consequences of a broad spectrum of postulated credible accidents have been considered, emphasizing those likely to cause loss

9208250286 920818 PDR ADDCK 05000073 P PDR of integrity of fuel-element cladding. The staff performed conservative analyses of the most serious credible accidents and determined that the calculated potential radiation doses in unrestricted areas are small fractions of 10 CFR Part 20 guidelines.

Since the increased limit of byproduct material remained a small fraction of the core inventory and the consequences of any accident including c ushing of the core were a small fraction of 10 CFR Part 20 values, the licensee concluded that the increased limit would not have a significant effect on the nealth and safety of the public.

The staff concurs with the licensee's analysis that because the byproduct material is required to be not readily dispersible and because the potential radiological content of the material is small compared to other source terms previously analyzed, the increased limit should not result in radiological consequences beyond those previously found acceptable.

Further, the staff recognized and confirmed with the licensee that:

- The byproduct material will be controlled under the licensee's radiological protection program which provides further assurance the material will meet all the requirements of 10 CFR Part 20, and provide acceptable assurance to protect the public health and safety, as well as that of site personnel; and
- 2. The byproduct material to be irradiated will be subject to the requirements of Technical Specifications 3.5.3 on experiments. These requirements include specifications to assure that the potential radiological dose from experiments are small compared to regulatory limits, i.e., Technical Specifications 3.5.3.12 and 3.5.3.13.

Therefore, the increased amount of material as used in the facility will be controlled to assure it is handled and used in a safe manner.

#### 3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and there is no significant increase in individual or cumulative occupational radiation exposure. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no Environmental Impact Statement or Environmental Assessment need be prepared in connection with the issuance of this amendment.

### 4.0 CONCLUSION

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The staff has concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously evaluated, or create the possibility of a new or different kind of accident from any accident previously evaluated, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed activities, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or the health and safety of the public.

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Dated: August 18, 1992