SAFETY EVALUATION BY THE RESEARCH & POWER REACTOR SAFETY BRANCH

DIVISION OF REACTOR LICENSING

IN THE MATTER OF

THE PACIFIC GAS & ELECTRIC COMPANY

PROPOSED CHANGE NO. 19

DOCKET NO. 50-133

Introduction

The Pacific Gas and Electric Company (PG&E) has requested, by letter dated June 14, 1965, a change to the Technical Specifications of License No. DPR-7. The proposed change would authorize the installation of additional storage racks in the Spent Fuel Storage Pool. This request has been designated Proposed Change No. 19.

Discussion

The present Technical Specifications allow for normal storage of irradiated fuel assemblies in 27 racks arranged in a 3 x 9 array in the Spent Fuel Storage Pool. Each rack is designed to hold 8 fuel assemblies in 2 groups of 4 assemblies. PG&E now requests authorization for additional storage capability of the pool. It proposes to increase the number of storage racks for undamaged or sound fuel assemblies to 44 and to add 45 storage racks for encapsulated fuel assemblies. The sound storage racks would hold 8 assemblies each, while the encapsulated storage racks could accommodate either 3 fuel assemblies or 1 fuel assembly inside of an 8" OD aluminum can.

The storage racks would be arranged in the pool so that the 44 sound racks would be in the central region, while the 45 racks for encapsulated fuel assemblies would be located along the perimeter of 3 sides of the pool. The racks are arranged to ensure an "always safe" geometry under normal and abnormal conditions. PG&E has indicated that k_{eff} would always be less than 0.9. The results of its analysis for various configurations of fuel assemblies in the pool is given below:

Configuration	k-effective
Three hundred and fifty-two fuel assemblies in the sound fuel storage racks	0.82
Above configuration with an additional fuel assembly placed in the most reactive position adjacent to any group of four fuel assemblies	0.88
Three hundred and fifty-two fuel assemblies in the sound fuel storage racks and 135 fuel assemblies in the encapsulated fuel storage racks	0.87

Configuration	k-effective
Above configuration with an additional fuel assembly placed in the most reactive position adjacent to any group of three fuel assemblies in the encapsulated fuel storage racks	0.89

We have reviewed the proposed change and believe the storage capacity of the Spent Fuel Storage Pool may be safely increased as described by PG&E and that the k_{eff} of the configurations will be less than 0.9.

Technical Specifications

To provide authorization of Proposed Change No. 19, we believe the Technical Specifications to License No. DPR-7 should be modified as follows:

(1) Subsection IX.E.4.a (page 74)

Delete paragraphs 10 and 11 in their entirety and replace with the following:

"(10) Normal storage for irradiated fuel shall be under approximately 19 feet of water in the fuel storage pool which shall be located in the Refueling Building. This pool shall be designed to store the fuel in an "always safe" geometry such that k-effective is less than 0.90 for the most reactive new fuel. The pool shall contain racks for both sound fuel storage and encapsulated fuel storage.

"(11) Other locations where irradiated fuel assemblies may be placed shall be 1) the fuel transfer cask, 2) the channel stripping machine, 3) temporary work or inspection fixtures, which shall contain no more than one fuel assembly, 4) the fuel assembly transfer racks located in the fuel storage pool, 5) any spent fuel shipping cask approved by the Commission for the shipment of fuel assemblies from this reactor, 6) the fuel assembly transfer rack located on top of the chimney in the reactor vessel during refueling operations, and 7) the eight temporary fuel storage racks located in groups of two, 90° apart, within the reactor vessel above the reactor core attached to the outside of the chimney. The latter two locations shall be used only when the reactor is in either the 'refueling' or 'cold shutdown' modes of operation."

(2) Subsection IX.E.4.a (page 74a)

Delete paragraph 12 in its entirety and replace with following:

"(12) Only one fuel assembly at a time shall be moved at or between any locations."

Conclusions

We have concluded that the proposed change in the Technical Specifications does not present significant hazards considerations not described or implicit in the hazards summary report, and that there is reasonable assurance that the health and safety of the public will not be endangered.

Original signed by:
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Date: JUL 6 1965