

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 9 TO FACILITY OPERATING LICENSE NO. DPR-7
(CHANGE NO. 51 TO THE TECHNICAL SPECIFICATIONS)

PACIFIC GAS AND ELECTRIC COMPANY

HUMBOLDT BAY POWER PLANT UNIT NO. 3

DOCKET NO. 50-133

INTRODUCTION

By letter dated May 23, 1975, the Pacific Gas and Electric Company (PG&E) requested changes to the Technical Specifications appended to Facility Operating License No. DPR-7 for the Humboldt Bay Power Plant Unit No. 3 (Humboldt Bay). The requested changes were in response to our letter dated May 16, 1975. The proposed changes would:

1. prevent transfer of fuel from the reactor core for at least 72 hours following reactor operation at power levels greater than 2.2 MWt.
2. restrict storage of irradiated fuel in the spent fuel pool in the vicinity of the fuel transfer cask to fuel assemblies with at least 60 days decay following removal from the reactor core. Newly irradiated fuel assemblies (maximum of three assemblies) would be permitted in the channel stripping machine and in the fuel transfer tube areas, which are within the spent fuel pool area.

DISCUSSION

Our continuing review of reactor plant safety resulted in a request for additional information regarding postulated spent fuel shipping cask drop accidents at the Humboldt Bay plant by our letter to PG&E dated February 4, 1974. On June 14, 1974, PG&E submitted the requested information including an analysis for fuel damage potential and radiological consequences for a fuel transfer cask drop accident. During our analysis of this postulated accident, we determined that the standby gas treatment system in the Humboldt Bay plant, which contains a caustic scrubber for the removal of radioiodine during such an accident, should have the capability to reduce the resultant accident

thyroid dose from radioiodine by a factor of 10 even under degraded conditions in order to reduce the potential radiological consequences to significantly less than 10 CFR Part 100 guideline doses. We informed PG&E of our conclusion by letter dated March 18, 1975 and requested additional information regarding the capability of the caustic scrubber system to reduce the potential radiological consequences of the fuel transfer cask drop accident to significantly less than 10 CFR Part 100 guideline doses. By letter dated April 24, 1975, PG&E proposed fuel handling procedures and fuel storage conditions which would significantly reduce the potential offsite radiological consequences from the postulated fuel transfer cask drop accident even if the caustic scrubber effectiveness for radioiodine removal was zero. For all cases, the potential radiological consequences of the fuel transfer cask drop accident were less than the 10 CFR Part 100 guideline doses.

By letter dated April 28, 1975, PG&E provided a description of the caustic scrubber system and the results of efficiency tests performed in 1963. The information that was provided on the caustic scrubber is currently under review.

As assumed by PG&E in their dose analysis submitted by their letter dated June 14, 1974, we used a decay period of 72 hours prior to transfer of fuel from the reactor core. Such a decay period results in the decay of all radioiodine isotopes except I-131 to a negligible inventory level. Therefore, only the I-131 equilibrium inventory needs to be considered in the thyroid dose analysis for the postulated fuel transfer cask drop accident involving the newly irradiated fuel assemblies. If the storage of irradiated fuel in the spent fuel pool area where fuel damage could result from such an accident is limited to irradiated fuel assemblies with at least 60 days decay, even the I-131 inventory has decayed to less than 1 percent of its equilibrium level. Therefore, by using these decay times for the transfer and storage of irradiated fuel assemblies, the potential offsite doses from the postulated fuel transfer cask drop accident can be reduced by more than the factor of 10 reduction that we would require from the caustic scrubber as stated in our March 18, 1975 letter.

By letter dated May 16, 1975, we requested that PG&E implement the fuel handling and storage procedures proposed in their April 24, 1975 letter as conditions in the Humboldt Bay Technical Specifications appended to Facility License No. DPR-7 rather than as administrative controls in the operating procedures of the plant. As stated in our letter dated May 16, 1975, we have concluded that the potential offsite doses resulting from a postulated fuel transfer cask drop accident would be significantly less than 10 CFR 100 guideline doses provided the proposed restrictions on handling and storage of irradiated fuel assemblies are implemented. We have concluded that the resulting potential offsite doses from such a postulated accident with the proposed restrictions would be less than 30 Rem and are acceptable.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change 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 operation in the proposed manner, 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 to the health and safety of the public.

Date: JUN 03 1975

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-133

PACIFIC GAS AND ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 9 to Facility Operating License No. DPR-7 issued to the Pacific Gas and Electric Company which revised Technical Specifications for operation of the Humboldt Bay Power Plant Unit No. 3, located near Eureka, California. The amendment is effective as of its date of issuance.

This amendment incorporates changes in the Technical Specifications necessary to restrict the storage and transfer of fuel assemblies by specifying a minimum decay time before transfer of fuel from the reactor core to the spent fuel pool and requiring a minimum decay time for fuel assemblies stored in an area where they could be damaged by dropping of the fuel transfer cask.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment is not required since the amendment does not involve a significant hazards consideration.

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For further details with respect to this action, see (1) the application for amendment dated May 23, 1975, (2) Amendment No. 9 to License No. DPR-7 with Change No. 51, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Reactor Licensing.

Dated at Bethesda, Maryland, this *3rd day of June 1975*.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Reactor Licensing

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DISCUSSION

Our continuing review of reactor power plant safety at the Humboldt Bay plant resulted in a request for additional information regarding postulated spent fuel shipping cask drop accidents by our letter to PG&E dated February 4, 1974. On June 14, 1974, PG&E submitted the requested information including an analysis for fuel damage potential and radiological consequences for a fuel transfer cask drop accident. During our analysis of this postulated accident, we determined that the standby gas treatment system in the Humboldt Bay plant which contains a caustic scrubber for the removal of radioiodine during such an accident, should have the capability to reduce the resultant accident

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March 18
add from [unclear] letter

thyroid dose from radioiodine by a factor of 10. We informed PG&E of our conclusion by letter dated March 18, 1975 and requested additional information regarding the capability of the caustic scrubber system to reduce the potential radiological consequences of the fuel transfer cask drop accident to significantly less than 10 CFR Part 100 guideline doses. By letter dated April 24, 1975, PG&E proposed fuel handling procedures and fuel storage conditions which would significantly reduce the potential offsite radiological consequences from the postulated fuel transfer cask drop accident even if the caustic scrubber effectiveness for radioiodine removal was zero.

*add sentence
regarding review of caustic scrubber status*

By letter dated May 16, 1975, we requested that PG&E implement the fuel handling and storage procedures proposed in their April 24, 1975 letter as conditions in the Humboldt Bay Technical Specifications appended to Facility License No. DPR-7 rather than as administrative controls in the operating procedures of the plant. As stated in our letter dated May 16, 1975, we have concluded that the potential offsite doses resulting from a postulated fuel transfer cask drop accident would be significantly less than 10 CFR 100 guideline doses provided the proposed restrictions on handling and storage of irradiated fuel assemblies are implemented. *We have concluded that the resulting potential offsite doses from such a postulated accident with the proposed restrictions would be less than 30 Rem and is acceptable.*

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change 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 operation in the proposed manner, 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 to the health and safety of the public.

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