

June 15, 1987

Docket

Docket Nos. 50-498
and 50-499

Mr. J. H. Goldberg
Group Vice - President, Nuclear
Houston Lighting and Power Company
P. O. Box 1700
Houston, Texas 77001

Dear Mr. Goldberg:

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT -
SCHEDULAR EXEMPTION FROM GENERAL DESIGN CRITERIA (GDC) 4, APPENDIX A,
10 CFR PART 50 - SOUTH TEXAS PROJECT, UNITS 1 AND 2

Enclosed is a copy of an "Environmental Assessment and Finding of No Significant Impact" for your information. This assessment is related to your letter dated May 26, 1987, in which you requested a schedular exemption from certain requirements related to GDC 4, Appendix A, 10 CFR Part 50.

The assessment has been forwarded to the Office of the Federal Register for publication.

Sincerely,

15/

Jose A. Calvo, Director
Project Directorate - IV
Division of Project Directorate - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
Environmental Assessment

cc w/enclosure:

See next page

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Mr. J. H. Goldberg
Houston Lighting and Power Company

South Texas Project

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Houston Lighting & Power Company - 2 - South Texas Project

cc:

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UNITED STATES NUCLEAR REGULATORY COMMISSION
HOUSTON LIGHTING AND POWER COMPANY, ET. AL.
SOUTH TEXAS PROJECT, UNITS 1 AND 2
DOCKET NOS. 50-498 AND 50-499
NOTICE OF ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of a Scheduler Exemption from a portion of the requirements of General Design Criterion (GDC) 4 (10 CFR Part 50, Appendix A) to the Houston Lighting and Power Company, acting for itself and for the City of San Antonio (acting by and through the City Public Service Board of San Antonio), Central Power and Light Company, and the City of Austin, Texas (the applicants). The Scheduler Exemption would apply to the South Texas Project (STP) Unit 1 located in Matagorda County, Texas. The limited exemption would extend until the second refueling outage of the STP Unit 1 by which time the outcome of the Commission's consideration of the "leak-before-break" concept as applied beyond the main coolant loop piping, is expected to become apparent.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action: The Scheduler Exemption would permit the applicants to not install pipe whip restraints and jet impingement shields and to not consider the dynamic effects associated with postulated pipe breaks in certain STP Units 1 and 2 piping systems, on the basis of advanced calculational methods for assuring that applied piping stresses would not result in rapidly propagating piping failure: i.e., pipe rupture.

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A PDR

Need for Proposed Action: The proposed Scheduler Exemption is needed in order for the applicants not to consider the dynamic loading effects associated with the postulated full flow circumferential and longitudinal pipe ruptures in the pressurizer surge line and the accumulator injection lines. These dynamic loading effects include pipe whip, jet impingement, asymmetric pressurization transients and break associated dynamic transients in unbroken portions of the main loop and connected branch lines. Therefore, the applicants would not be required to install, for the time being, protective devices such as pipe whip restraints and jet impingement shields related to postulated break locations in the pressurizer surge line and the accumulator injection lines. Analysis shows that the pipe breaks, which these devices are designed to protect against, are extremely unlikely. On the other hand, the presence of these devices increases inservice inspection time in the containment and their elimination would lessen the occupational doses to workers and facilitate inservice inspections.

GDC 4 requires that structures, systems and components important to safety shall be appropriately protected against dynamic effects including the effects of discharging fluids that may result from equipment failures, up to and including a double-ended rupture of the largest pipe in the reactor coolant system (Definition of LOCA). In recent submittals the applicants have provided information to show by advanced fracture mechanics techniques that the detection of small flaws by either inservice inspection or leakage monitoring systems is assured long before flaws in the piping materials can grow to critical or unstable sizes which could lead to large break areas such as the double-ended guillotine break or its equivalent. The NRC staff has reviewed and accepted the applicants' conclusion. Therefore, the NRC staff

agrees that double-ended guillotine break in the piping associated with the pressurizer surge line and the accumulator injection lines and their associated dynamic effects, need not be required as a design basis accident for pipe whip restraints and jet impingement shields; i.e., the restraints and jet shields are not needed. Accordingly, the NRC staff agrees that a partial exemption from GDC 4 is appropriate. However, the Commission has not yet finalized action on the staff recommendation which applies this methodology beyond the main coolant loop.

Environmental Impact of the Proposed Action: The proposed Scheduling Exemption would not affect the environmental impact of the facility. No credit is given for the restraints and shields to be eliminated in calculating accident doses to the environment. While the jet impingement barriers and pipe whip restraints would minimize the damage from jet forces and whipping from a broken pipe, the calculated limitation on stresses required to support this Scheduling Exemption assures that the probability of pipe breaks which could give rise to such forces are extremely small; thus, the pipe whip restraints and jet impingement shields would have no significant effect on the overall plant accident risk.

The Scheduling Exemption does not otherwise affect radiological plant effluents. Likewise, the relief granted does not affect non-radiological plant effluents, and has no other environmental impact. The elimination of the pipe whip restraints and jet impingement shields would tend to lessen the occupational dose to workers inside containment. Therefore, the Commission concludes that there are no significant radiological impacts associated with the Scheduling Exemption.

The proposed Scheduling Exemption involves design features located entirely within the restricted area as defined in 10 CFR Part 20. It does not affect

plant non-radioactive effluents and has no other environmental impact. Therefore, the Commission concludes that there are no non-radiological impacts associated with this proposed Scheduler Exemption.

Since we have concluded that there are no measurable negative environmental impacts associated with this Scheduler Exemption, any alternatives would not provide any significant additional protection of the environment. The alternative to the Scheduler Exemption would be to require literal compliance with GDC 4 for the duration of the license.

Alternative Use Of Resources: This action does not involve the use of resources not previously considered in the Final Environmental Statement (NUREG-1171) for STP, Units 1 and 2.

Agencies and Persons Contacted: The NRC staff reviewed the applicants' request and applicable documents referenced therein that support this Scheduler Exemption for STP, Units 1 and 2. The NRC did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for this action. Based upon the environmental assessment, we conclude that this action will not have a significant effect on the quality of the human environment.

For details with respect to this action, see the request for exemption dated May 26, 1987, which additionally provides a description of the submittals leading up to the NRC staff's technical evaluation of the exemption request, which is available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., and at the Wharton County Junior College, J. M. Hodges Learning Center, 911 Boling Highway, Wharton, Texas

77488. The staff's technical evaluation of the request will be published with the Operating License (if it is granted) and will also be available for inspection at both locations listed above.

Dated at Bethesda, Maryland, this 15 day of June .

FOR THE NUCLEAR REGULATORY COMMISSION



Frank Schroeder, Acting Director
Division of Reactor Projects, III, IV,
V and Special Projects
Office of Nuclear Reactor Regulation