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TEXAS UTILITIES GENERATING COMPANY

SKYWAY TOWER * 400 NORTH OLIVE STREET, L.B. 81 * DALLAS, TEXAS 75201

February 17, 1984

R. J. GARY
EXECUTIVE VICE PRESIDENT

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

ATTENTION: Mr. B. J. Youngblood, Chief
Division of Licensing
Licensing Branch No. 1

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
UNITS 1 AND 2; DOCKET NOS. 50-445 AND 50-446
REQUEST FOR PARTIAL EXEMPTION

REF: (a) Generic Letter 84-04, from Darrel G. Eisenhut to PWR Licensees, Construction Permit Holders and Applicants for Construction Permits, dated February 1, 1984

(b) Letter from J. J. Ray (ACRS) to William Dircks (NRC) dated June 14, 1983

Gentlemen:

Our respective staffs have met several times to discuss the application of alternative pipe break analytical techniques to certain postulated pipe breaks at Comanche Peak. Based on these discussions and the information discussed herein, we propose to employ these techniques in order to eliminate the need to address certain dynamic effects associated with postulated RCS primary loop pipe breaks. By Generic Letter 84-04 (Reference (a)), the NRC has determined that the generic analyses submitted by Westinghouse in connection with the resolution of Generic Issue A-2, in conjuction with plant specific studies prepared by Westinghouse, provide an adequate basis for applying the alternative pipe break analyses to Westinghouse PWRs such as Comanche Peak. That letter indicates that in order to obtain NRC concurrence with the proposed application of these techniques it is necessary to request an exemption from portions of GDC 4. Accordingly, we hereby submit our request for a partial exemption from that regulation.

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Request for Partial Exemption

In accordance with Generic Letter 84-04, Texas Utilities hereby requests an exemption, pursuant to 10 C.F.R. 50.12(a), for Comanche Peak, Units 1 and 2 from the provisions of GDC 4 which require protection of structures, systems and components against certain of the dynamic effects (identified below) associated with postulated breaks in the RCS primary loop.[1] Specifically, Texas Utilities requests a partial exemption from GDC 4 in order to eliminate from further consideration at Comanche Peak discharging fluid (jet impingement) loads associated with the following postulated circumferential and longitudinal pipe breaks in the RCS primary loop:

RCS Primary Loop Pipe Break Locations	Type of Break
Reactor vessel inlet nozzle	circumferential
Reactor vessel outlet nozzle	circumferential
Steam generator inlet nozzle	circumferential
Steam generator outlet nozzle	circumferential
Reactor coolant pump inlet nozzle	circumferential
Reactor coolant pump outlet nozzle	circumferential
Fifty degree elbow at intrados	longitudinal
Loop closure weld in crossover leg	circumferential

By this request Texas Utilities does not seek exemption from GDC 4 to eliminate the need to evaluate pipe breaks or dynamic effects other than those specifically identified above. Further, this request does not affect the environmental, containment or ECCS design bases for Comanche Peak. We believe the generic technical evaluations already performed by Westinghouse, in conjunction with the plant-specific information prepared by Westinghouse for Comanche Peak which has already been submitted to the NRC (by letter dated October 31, 1983, from H. C. Schmidt (Texas Utilities) to B. J. Youngblood (NRC)), provide full technical justification for granting the requested exemption.

Justification for Exemption

Considerable industry development work and NRC-sponsored research has been conducted regarding the use of alternative pipe break analysis employing advanced fracture mechanics. As indicated in Generic Letter 84-04, the NRC is technically satisfied with generic information submitted by Westinghouse

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1 GDC 4 provides in pertinent part, as follows:

> These structures, systems and components [important to safety] shall be appropriately protected against dynamic effects, including the effects of missiles, pipe whipping, and discharging fluids, that may result from equipment failures and from events and conditions outside the nuclear power unit [10 C.F.R. Part 50, Appendix A, GDC 4.]

regarding this topic in connection with the resolution of Generic Issue A-2 for Westinghouse PWRs. In addition, the results of NRC-sponsored research support the elimination of RCS primary loop pipe breaks in all Westinghouse plants east of the Rocky Mountains. The ACRS has also reviewed both industry and NRC efforts in this area and concluded (Reference (b)), that such analytical techniques are technically valid and appropriate for application to reactor licensing.

In response to a request by your Staff, Westinghouse also prepared a report which provides the technical bases for application of advanced fracture mechanics to Comanche Peak. This report, in both proprietary and non-proprietary versions (twenty copies each), along with an application for withholding (CAW-83-95), was submitted with our letter of October 31, 1983, to Mr. Youngblood, referenced above. This report demonstrates that the generic evaluations performed by Westinghouse (which show that RCS primary loop breaks are very unlikely and should not be included in the structural design bases of Westinghouse plants) are applicable to the Comanche Peak plant. Specifically, this report demonstrates that the specific parameters for the Comanche Peak plant are enveloped by the generic analysis performed by Westinghouse in WCAP-9558 and accepted by the NRC as noted in Generic Letter 84-04. We believe these analyses demonstrate that the requested exemption is technically justified.

In addition to the above information, your staff should be aware that the CPSES Reactor Coolant Pressure Boundary Leak Detection Systems meet the requirements of Regulatory Guide 1.45 as discussed in Section 5.2.5 of the CPSES Final Safety Analysis Report (FSAR). Specific detection requirements are described in the CPSES Technical Specifications, Section 3/4.4.6. The referenced Westinghouse report demonstrates that there is a wide margin between the leak rate associated with the stable through-wall crack and the smallest detectable leak rate computed for Comanche Peak. Thus, the likelihood of a crack developing into a pipe break without prior detection of the leak is extremely low. In this regard, the ACRS has determined (Referece (b)) that "... there is no known mechanism in PWR primary piping material for developing a large break without going through an extended period during which the crack would leak copiously." Also, we note that all design criteria in the FSAR for the design of the RCS primary loop for Unit 1 have been met. In sum, a high degree of safety would be maintained at Comanche Peak if the above requested exemption is granted.

Cost/Benefit Assessment

Texas Utilities is assessing the cost savings (both monetary and health) which would be realized if the requested exemption is granted. Preliminary figures from this assessment indicate that direct monetary savings and radiological exposure savings will be realized should the partial exemption be granted. Given the strong technical justification for eliminating further consideration of the jet impingement loads associated with the specified RCS primary loop breaks, it is apparent that no adverse safety impact would arise by granting this request. Accordingly, the benefits

that will accrue from granting this request are not offset by adverse impacts. Thus, there is clearly sufficient justification for granting the request. Texas Utilities anticipates that they will complete their cost/benefit assessment shortly, and will forward that to your office for review.

Request for Expedited Consideration

As has been discussed with your Staff, evaluation of jets from postulated RCS primary loop pipe breaks has indicated that jet impingement barriers may be required for certain of the postulated breaks for which this exemption is requested. Currently, such barriers for Unit 1 have neither been designed nor installed. Because of the current urgency of this situation on Unit 1, Texas Utilities requests that the Staff review and rule on, on an expedited basis, the request for eliminating the need to consider jet impingement from postulated RCS primary loop pipe breaks in Unit 1. We are prepared to meet with your staff at their convenience to resolve any questions that may arise and provide whatever information may be necessary to resolve this request promptly.

Proprietary Information

The proprietary version of the report prepared by Westinghouse which is referenced above, and which was submitted to the NRC by our October 31, 1983 letter, contains information proprietary to Westinghouse Electric Corporation, the owner of the information. As stated in that letter, we simultaneously transmitted an affidavit signed by Westinghouse management which sets forth the basis on which the information contained in the proprietary version of the report may be withheld from public disclosure, in accordance with the requirements of 10 C.F.R. 2.790(b)(1). The affidavit addresses the specific considerations of 10 C.F.R. 2.790(b)(4). Correspondence with respect to the proprietary aspects of the affidavit and Application for Withholding should reference CAW-83-95 and should be addressed to R. A. Wiesemann, Manager, Regulatory and Legislative Affairs, Westinghouse Electric Corporation, P.O. Box 355, Pittsburgh, Pennsylvania, 15230.

If you have any questions regarding this submittal, please contact me at (214) 754-0600 or Mr. David Wade at (214) 653-4872.

Sincerely,

R. J. Gary
Executive Vice President

RJG/grr