TEXAS UTILITIES SERVICES INC.

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October 24, 1983

Mr. B. J. Youngblood U.S. Nuclear Regulatory Commission Office of Nuclear Reactor Regulation Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION DOCKET NOS. 50-445 AND 50-446 FIRE RATING OF WATERTIGHT DOORS

Dear Mr. Youngblood:

Watertight doors used in three-hour rated fire barriers at CPSES have not been rated as three-hour fire barriers. However, these doors are of standard industrial design and similar to doors fire tested by Southwest Research, Inc. for Baltimore Gas Electric Company as documented in the final report of SWRI Project No. 01-6763-201 dated February 1982. The conclusions of this report are attached.

The results of this test are conservative with respect to CPSES watertight doors for the following reasons:

- Seals used in the BG&E test were constructed of standard neoprene, where as CPSES seals are constructed of RTV silicone elastomer materials similar to those used in penetration seal construction. The use of silicone seals should retard the onset of flame penetration as observed in the BG&E test.
- 2. Automatic water sprinkler coverage and detection are provided in areas where combustible loading exceeds one hour duration. Full or partial automatic sprinkler coverage and detection are provided in most other areas as described in Table 3.d of the CPSES submittal entitled "Justification of Exceptions to 10 CFR 50 Appendix R".
- 3. The BG&E test demonstrated that cable trays placed within two feet of the door did not exceed 219°F during the test. At CPSES, all fixed combustibles and unprotected safe shutdown cable trays are in excess of two feet from the doors.

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The results of the BG&E test verify the acceptability of standard industrial watertight doors as three hour fire barriers. The similiarity of construction and the conservatisms listed above make the conclusion applicable to CPSES.

Should you have questions in this matter, please contact me directly.

Sincerely,

Manhall for H. C. Schmidt

BSD/grr Attachment

VIII. TEST CONCLUSIONS

The test results have been summarized and are compared with the acceptance criteria as outlined in Baltimore Gas & Electric's test specifications.

A. Test No. 1 - Watertight Door

 The door assemblies shall be considered acceptable when they remain in the opening during the fire endurance and hose stream tests provided that:

a. No openings develop to allow continuous flaming. <u>Observation:</u> No openings developed to allow continuous flaming. The combustible gasket seal was ignited, burned for about 10 minutes until consumed.

 b. Some intermittent light flames (approximately
6 in. long), for periods not exceeding 5-minute intervals, may occur along the edges of the doors.

Observation: Yellow-orange, smokey flaming did occur along the edges of the door for about 10 minutes while the combustible gasket seal burned. Flames would be characterized as "lazy, drifting without direction" and about 3 to 16 in. in length.

c. Light flaming may occur during the last 15 minutes of the classification period on the unexposed surface area of the door, provided it is contained within a distance of 1-1/2 in. from the vertical edge and within 3 in. from the top edge of the door. <u>Observation:</u> No flames were evident at the edges of the door during the last 15 minutes of the 3-hour test. 2. Hose stream test results.

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Observation: The door remained in place and did not deflect to create an opening.

3. Performance of each door assembly and water curtain shall be evaluated at 15-minute intervals throughout the 3-hour duration of the fire endurance test. The door assembly and water curtain fire resistance will be judged acceptable for utilization up to the 30-minute time interval attained prior to failure to meet the acceptance criteria delineated in paragraphs A and B or 3 hours, whichever occurs first. Observation: Considered acceptable for 3-hour fire resistance as demonstrated by this fire endurance and hose test. Although the combustible gasket seal burned, the heat release was insignificant as shown on the composite plot of thermocouple readings (Figure 15). Light intermittent flaming began at 13 minutes into the test, continuous flaming along the top and side edges began at 19 minutes, and flaming stopped completely at 23 minutes into the test.

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