

TEXAS UTILITIES GENERATING COMPANY
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JOHN W. BECK
MANAGER-LICENSING

December 20, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

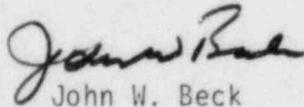
SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
DOCKET NOS. 50-445 AND 50-446
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
ON SAFE SHUTDOWN AND ALTERNATE SAFE SHUTDOWN

REF: (1) B. J. Youngblood to M. D. Spence letter of
November 6, 1984 entitled "Request for
Additional Information Pertaining to the Safe
Shutdown and Alternate Safe Shutdown Design of
Comanche Peak Steam Electric Station (Units 1 and 2)"

Dear Sir:

Reference (1) provided six requests for additional information. The responses to these questions are attached. Please note that copies of the Comanche Peak Steam Electric Station Fire Protection Program Review Task report are being submitted (under separate cover) in support of these responses.

Respectfully,


John W. Beck

DRW:tls
Attachment

Distribution: Original + 40

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Q010.26

The analysis of associated circuits as they relate to safe shutdown systems and high-to-low pressure interfaces is incomplete. The applicant has committed to complete the associated circuit analysis prior to exceeding 5% power. To complete this review we need the following information.

- a. identification of high-to-low pressure interfaces,
- b. verification that each redundant valve's power and control cabling are properly separated.

R010.26

Texas Utilities will complete the associated circuit analysis and will report this completion prior to exceeding 5% power.

- a. The high-to-low pressure interfaces are listed below:
 1. RHR/RCS Boundary Isolation Valves
 2. Pressurizer Power-Operated Relief Valves
 3. Normal Letdown Isolation Valves
 4. Excess Letdown Isolation Valves
 5. Reactor Head and Pressurizer Vent Valves
- b. The CPSES design protects against a high-to-low pressure failure at these interfaces as described in the CPSES Fire Protection Program Review Report. A tabular summary is provided in Table 3-3.1 of that report.

Q010.27

The applicant has not verified that protective devices, that are relied upon to prevent fires in associated circuits from affecting safety related equipment, are located outside of the fire zone containing the affected associated circuits.

RC10.27

Associated circuits can develop an electrical fault due to a fire. If the fire is not in the same fire area as the protective device for that circuit, the protective device will clear the fault to prevent the circuit from generating new fires in other locations. The fire will not propagate along the wire due to the fire resistant characteristics of the wire and the use of fire stops.

If the fire develops in the same area as the protective device for an associated circuit, the fire safe shutdown analysis does not take credit for that protective device to clear an electrical fault. The analysis assumes that the next upstream protective device (not in that fire area) will clear the fault. The only area of concern is that portion of the circuit between the fault and the protective device and that portion of the circuit is already in the affected fire area. The fire will not propagate along the cable to other fire areas for the same reasons mentioned above. For the credible fire scenarios that we have defined, a fire in a fire area that contains an associated cable and its protective device will not jeopardize the integrity of the cables required for safe shutdown.

In evaluating associated circuits powered from a common power supply, multiple high resistance grounds

CPSES/FSAR

could be postulated on several different associated circuits with the same power supply such that the protective devices for the associated circuits would not trip but the protective device for the common power supply would trip. This situation was considered but the probabilities of getting the needed high resistance grounds on the proper associated circuits simultaneously was considered too low to merit additional consideration.

Q010.28

The applicant has not confirmed that acceptable coordination and selective tripping is provided for safe shutdown circuits on the ac and dc power systems.

R010.28

In order to ensure that associated circuits that share a common power supply with safe shutdown circuits do not trip the common power supply during a fire, the protective device for the associated circuit must be set to trip before the protective device for the common power supply. This is commonly referred to as breaker/fuse coordination and selective tripping. Proper coordination is usually assured by verifying that the protective device for the branch circuit has a lower instantaneous trip setting than the protective device for the common power supply or verifying that the time current curve for the branch circuit protective device will actuate before the time current curve for the common power supply protective device for the anticipated range of fault currents of concern.

The design criteria for the protective devices at CPSES included requirements to ensure proper breaker/fuse coordination and selective tripping. A small audit was conducted to confirm this portion of the design. Although no confirmed problems were uncovered by this audit, the audit did reveal that many setpoints for protective devices are variable and that verification that the branch protective device will trip first is not always an easy task. To provide better assurance that our design is adequate, TUGCO plans to evaluate these audit results

CPSES/FSAR

more closely. If necessary, additional circuits will be examined. If any doubts are raised, a 100% confirmation of the protective devices of concern will be performed.

This confirmation effort is a complex task that could take a significant period of time. In the interim, however, the high confidence established by our design requirements and the high level of compliance by CPSES in the overall fire protection area, justifies CPSES operation until the confirmation effort is completed. TUGCO can commit that this confirmation effort will be completed prior to startup for the second operating cycle.

Q010.29

The applicant has committed to ensure that electrically induced secondary fires in common enclosures will not occur by reviewing a sufficient number of cables that share a common enclosure with safe shutdown equipment. The purpose of this review is to confirm that the design provides adequate electrical protection. We require the applicant to demonstrate that the design provides adequate electrical protection by reviewing all cables that share a common enclosure with safe shutdown equipment.

R010.29

The design at CPSES provides adequate electrical protection for all power circuits. The protective devices were selected to meet the requirements of the National Electrical Code. The confirmatory audit was done as part of our overall fire protection review to provide additional confidence that the design requirements were properly met. The CPSES design provides adequate electrical protection for all cables that share common enclosures.

CPSES/FSAR

QC10.30

The applicant has not verified that all plant design changes are incorporated into the fire safe shutdown analysis. The applicant has committed to this verification prior to exceeding 5% power.

Q010.30

Texas Utilities will complete verification that all plant design changes are incorporated into the fire safe shutdown analysis and will report the completion of this verification effort prior to exceeding 5% power.

CPSES/FSAR

Q010.31

The applicant has not confirmed that their design has the capability to achieve and maintain hot shutdown condition without repairs to the safe shutdown systems.

R010.31

The design of CPSES includes the capability to achieve and maintain a hot shutdown condition without repairs to the safe shutdown systems.