

The Light company

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Mr. Harold Denton
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Denton:

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Submittal of the Fire
Hazards Analysis Report

Enclosed for NRC review and approval is the South Texas Project (STP) Fire Hazards Analysis Report (FHAR). This report supersedes the previously docketed STP FHAR.

The STP design is unique to the industry in a significant respect. From a nuclear safety standpoint, the STP design is, in fact, unique since in the event of a fire the design includes the capability to safely shutdown the units with two independent pathways rather than one. This unique design consists chiefly of three redundant and independent trains of safe shutdown capability, each of which is separated from the others by complete fire barriers. The implementation of this unique design, along with the development of an effective fire plan that assures that the plant staff can control and limit any fire to a given fire area, was achieved at considerable additional expense. Since the NRC fire protection regulations and guidance documents, and resultant fire protection features were directed at plants with only two independent safe shutdown trains, they do not recognize the equivalent level of safety that STP design has achieved without the addition of all the automatic fixed suppression which has been traditionally required.

The STP fire protection scheme does provide fixed suppression for substantial hazards such as charcoal filters, diesel fuel oil storage tanks, etc, but does not, in general, provide fixed suppression for lesser hazards such as IEEE-383 cables which are separated in three safe shutdown trains and for which manual suppression is provided to limit any such fire hazard to a given fire area. Additional fixed suppression has been provided to augment manual suppression in already separated cable areas where we have conscientiously

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determined that manual suppression alone would be difficult. This was done in an effort to assure ourselves that we can successfully fight a fire in any area. We believe our evaluations show that the STP design achieves a higher level of overall safety than prevailing two-train plants.

A quick summary of the most significant points of the STP fire protection design follows:

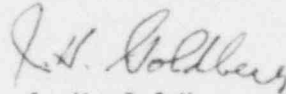
- The plant can be brought to safe shutdown by either of two redundant and independent remaining pathways following a complete loss of any single fire area. There are some exceptions which are noted in the report.
- In most cases, three "bunkered" trains (A, B, and C) of fire-separated equipment are provided for each necessary safe shutdown function.
- Manual fire fighting is used to limit damage to only one fire area. In certain fire areas, fixed holding sprays are provided to supplement the manual fire fighting capability.
- In most cases, a superior design using three-trains of safety-related equipment needed for accident mitigation (but not safe shutdown) are provided. For example, three High Head Safety Injection and three Low Head Safety Injection pumps are provided for the safety injection function in lieu of other plant designs which require a combination of Residual Heat Removal and Charging equipment to accomplish this function. These safety-related (but not safe shutdown) systems are not specifically protected.
- In the event of a disabling fire in the Control Room or Relay Room, the plant can be brought to safe shutdown via the use of the auxiliary shutdown stations where control of three safe shutdown trains is provided.
- Fire area boundaries are three-hour-rated walls with comparably rated penetration seals. The limited number of deviations taken are described and justified by use of an equivalent separation criterion.
- All cable spreading rooms are divided into separate fire areas with one exception (Train A power cable vault).

- Substantial real fire hazards such as charcoal, transformers, diesel fuel tanks, etc. are provided with fixed automatic suppression. However, the lesser hazards of IEEE-383 cables, limited to one vertical floor, are not. This includes the cable spreading rooms.
- Fire loading analysis is done by fire zones (subsets of fire areas) which are separated from each other by heavy concrete walls. However, in analyzing the consequences of a fire, the entire fire area is conservatively assumed to be lost.
- Battery rooms and switchgear rooms are separated by fire zones with heavy concrete walls but are not separated as fire areas.
- Complete Loss of Offsite Power (LOOP) is assumed for 24 hours.
- Emergency lighting is provided for hot shutdown areas.

We are ready to meet with the NRC reviewer at any time during the review that it is necessary to resolve comments.

If you should have any questions concerning this matter, please contact Mr. Michael E. Powell at (713) 993-1328.

Very truly yours,



J. H. Goldberg
Group Vice President, Nuclear

MEP/CAA/syt

Attachment: STP FHAR

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