Nuclear Operating Company

South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

November 18, 2009
U7-C-STP-NRC-090204

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

South Texas Project
Units 3 and 4
Docket Nos. 52-012 and 52-013
Response to Request for Additional Information

Attached is the response to an NRC staff question in Request for Additional Information (RAI) letter 283, related to COLA Part 2, Tier 2, Section 8.2, "Offsite Power Systems." This letter provides the complete response to RAI letter 283.

An attachment provides the response to the following NRC staff question:

08.02-22

There are no commitments in this letter.

If you have any questions regarding these responses, please contact me at (361) 972-7136, or Bill Mookhoek at (361) 972-7274.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 11/18/09

Scott Head
Manager, Regulatory Affairs
South Texas Project Units 3 & 4

rhb

Attachment: RAI 08.02-22

D091
NRO

STI 32575912

cc: w/o attachments and enclosure except*
(paper copy)

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RAI 08.02-22

QUESTION:

In response to RAI 08.02-7 pertaining to how the incidents identified in FSAR Table 8.2-3 would be used in the design of the new switchyard and transmission lines, the applicant clarified that a portion of the 166 unknown and 147 weather-related transmission line incidents were instantaneous circuit breaker trips where the fault was cleared and the line brought back into service instantaneously. In the remaining cases the circuit breaker cleared the fault and was locked out, requiring the Transmission Service Provider to bring the line back to service. Table 8.2-3 was revised to provide a breakdown of the incidents showing whether the breaker had re-closed instantaneously or locked out. The applicant also clarified that the historical transmission line incidents would not affect the new switchyard's design. Despite the clarifications provided, the staff has further questions. The staff review of revised Table 8.2-3 found that of the 525 circuit breaker actuations experienced by STP, Units 1 and 2, switchyard during a period of 26 years 269 resulted in circuit breaker lockouts. Of the 269 lockouts nearly 200 were either related to unknown causes (63), or to weather (94) and insulator flash-over (36). An almost equal amount of events (175) from the same causes resulted in an instantaneous re-closure of the circuit breakers, but could have resulted in lockouts. Since these and other events included in the Table are potentially related to switchyard and line maintenance, furnish the following information:

1. State whether the events in Table 8.2-3, ever resulted in multiple line failures during the period of observation.

2. State whether multiple-line failures have ever occurred when the instantaneous breaker re-closures had resulted in breaker lockouts.

3. State whether a loss of offsite power or partial loss of offsite power was ever experienced by STP, Units 1 and 2.

4. State whether any corrective actions were taken as a result of the events of Table 8.2-3 and whether there was a similar reoccurrence after completion of these corrective actions.

RESPONSE:

1. The events in Table 8.2-3 have resulted in multiple 345kV transmission line failures 35 times during the period of observation. Of the events which resulted in multiple-line failures, 34 events were outages of two transmission lines. One event resulted in an outage of three transmission lines; however two of those lines are the same double-circuit transmission line, sharing the same towers.

   In the 34 two-line outage events, 28 involved circuits that share the same tower; 24 of which were outages of the Hill Country and Skyline transmission lines. The transmission company responsible for these circuits recognized the large number of outages and, in

2004, replaced the circuits' ceramic insulators with polymer insulators. This change resulted in greatly increased reliability through the remainder of the period of observation. Also, in 2007 an additional substation (Elm Creek) was installed between the STP switchyard and the Hill Country and Skyline substations, shortening the transmission line length by about 30 miles and reducing its exposure to faults.

2. The available data for the events in Table 8.2-3 indicates that multiple-line outages were not a result of instantaneous breaker re-closures that subsequently locked-out.

3. STP Units 1 and 2 have never experienced either a loss of offsite power or a partial loss of offsite power due to a transmission line or switchyard event.

4. The switchyard and transmission system are owned and operated by separate transmission companies and are outside the scope of STP's corrective action program; therefore, no corrective actions were taken as a result of the events in Table 8.2-3. While the transmission system does not fall within the STP's corrective action program, as stated above, the transmission companies have responded to enhance the reliability of the offsite distribution system.

No COLA revisions are required as a result of this response.