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**TEXAS UTILITIES GENERATING COMPANY**  
SKYWAY TOWER • 400 NORTH OLIVE STREET, L.B. 81 • DALLAS, TEXAS 75201

May 1, 1985

JOHN W. BECK  
MANAGER-LICENSING

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  
SAFETY PARAMETER DISPLAY SYSTEM

REF: (1) B. J. Youngblood to M. D. Spence  
letter of December 5, 1984, entitled  
"Submittal of NRC Staff Report  
Evaluating the Adequacy of the  
Safety Parameter Display System for  
Comanche Peak Steam Electric Station  
(Units 1 and 2)"

Dear Sir:

Reference (1) provided the NRC staff's safety evaluation report relative to the Safety Parameter Display System (SPDS) at Comanche Peak Steam Electric Station (CPSES). Reference (1) also requested that Texas Utilities Generating Company (TUGCO) respond to the omissions described in Section III.B of that evaluation. Attached are the requested responses.

The verification and validation (V&V) program for CPSES Unit 1 has been completed. The ERF Computer System, of which SPDS is a portion, is dynamic in nature and will be changing as additional site specific functions and variables are installed. All additions will be implemented under the V&V Program to assure the maintenance of system integrity and validity.

The attached responses, the completion of the Unit 1 V&V Program, and the site confirmatory audit (scheduled for June of this year) all provide input for the resolution of this SER outstanding issue (SSER No. 5, Outstanding Issue (35)).

Respectfully,

*John W. Beck*  
John W. Beck

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Attachment

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ATTACHMENT TO TXX-4469

RESPONSE TO NRC STAFF SER FOR SPDS AT CPSES

The NRC staff safety evaluation report on the SPDS at CPSES includes several items in Section III.B that require TUGCO response. These items and the TUGCO responses are provided below:

1. " . . . the status of containment isolation is not proposed for the Comanche Peak SPDS. Containment isolation is an important variable for use in making a rapid assessment of Containment Conditions. In particular, a determination that known process pathways through containment have been secured provides critical additional assurance that containment integrity is intact. Therefore, adequate justification for the absence of containment isolation from SPDS should be provided. Availability of required information at other locations in the control room is not adequate justification."

Response:

It is correct that there is no containment isolation parameter displayed on the SPDS. However, the status of each containment isolation valve (i.e., CLOSED/NOT CLOSED) can be displayed on the TSC, EOF, and non-SPDS Control Room CRT displays via the POINT RECORD function of the ERFCS. In a matter of seconds, the status of each valve can be ascertained as required by the particular isolation that may be in effect. A study is in progress to determine the most effective containment isolation display(s) for CPSES. Study results will be reflected in a later revision to the CPSES ERFCS Safety Analysis Report, as appropriate.

2. "For a rapid assessment of Radioactivity Control, the applicant has not demonstrated how radiation in the secondary system (steam generators and steamlines) is monitored by SPDS when the steam generators and/or their steamlines are isolated. The applicant

should consider the need for this capability during the final phases of the verification and validation program."

"The above variable does, for given scenarios, provide a unique input to the determination of status for its critical safety function, which has not been discussed by the applicant as being satisfied by other variables in the proposed Comanche Peak SPDS list. The staff position is that the applicant address this variable and its function by adding the variable to the Comanche Peak SPDS or provide alternate added variables along with justifications that these alternates accomplish the same safety functions for all scenarios, or provide justification that variables currently on the Comanche Peak SPDS do in fact accomplish the same safety functions for all scenarios."

Response:

The status of each radiation monitor that make up the Radiation Monitor System (RMS) at CPSES can be displayed on the TSC, EOF, and non-SPDS Control Room CRT displays via the POINT RECORD function of the ERFCS. Of these, selected sets (as given in Table 1 of the subject report) are displayed on the SPDS. There are no current plans to add more radiation monitors to the CPSES RMS.

Radiation in the secondary system is adequately monitored by SPDS when the steam generators and/or their steamlines are isolated. This monitoring function is accomplished by means of the Main Steam Line Radiation, Steam Generator Blowdown Radiation and Condenser Off Gas Radiation monitors. The safety concerns relative to radiation in the secondary system center around establishing the existence of a primary-to-secondary leak and controlling the release of radiation from the plant. The monitors identified above accomplish these tasks and thereby satisfy the requirements for radioactivity control for the secondary system.

3. "The ERG's are not specifically identified by the applicant as a document considered for selection of the parameters. Since an

important goal of a display system is coordination with the ERG's as defined in NUREG-0737, Supplement 1, and since plant-specific guidelines could also influence the selection of SPDS variables the applicant's submittal should be expanded to address these areas."

Response:

The CPSES SPDS has been developed in parallel with the generic and plant specific ERG's. The CPSES ERFCS Safety Analysis Report will be revised to address the coordination between the selected parameters and the site specific ERG's.

4. "Design flexibility should be provided for possible future expansion of the SPDS."

Response:

The CPSES ERFCS currently monitors 1200 inputs (400 analog and 800 digital) of which approximately 400 are spares reserved for future expansion requirements. With additional multiplexer hardware (muxes and submuxes), a total of 4096 inputs can be monitored with the current ERFCS.

5. "The applicant's submittal described the verification and validation program for SPDS. However, the description focuses primarily on software considerations and does not address validation of the set of variables for SPDS. The applicant should provide a description of the parameter validation program, discussing the following items:

- 1) Validation tests involving operators' ability to assess Critical Safety Functions during control room walkthroughs of transients and accidents while utilizing the SPDS.
- 2) Parameter representativeness as evidenced by:



- a) The selected test cases exercise the SPDS parameters to the fullest extent possible, including beyond-design-basis scenarios.
- b) The proposed test cases cover the instrument set points for system actuation (e.g., ECCS actuation) and operator actions (e.g., RWST level for switchover) identified in the EOPs."

Response:

- 1) During the development of the generic Safety Assessment System (SAS) for the WOG AD HOC Committee on Instrumentation Systems, a series of validation tests were conducted at the Indian Point Unit 2 simulator to validate the SPDS parameters. These tests are documented in reference 5 of the CPSES ERFCS SAR. The validation tests, which were based on the NSAC-40 recommendations for testing, demonstrated the adequacy of the SPDS design/parameters for operators to use in monitoring the status of the critical safety functions per NUREG-0737, Supplement 1. The CPSES ERFCS functional design is based on this generic SAS design. In addition to the CPSES/generic functional correlation, the parameter selection for the CPSES SPDS displays have been reviewed against the CPSES plant-specific Functional Restoration Guideline (FRG) procedures and the parameters are sufficient to monitor the critical safety functions addressed in the CPSES FRG procedures. The CPSES ERFCS SAR will be revised to include a discussion relating the CPSES SPDS parameters to the site specific FRG's.
- 2) The full range of each qualified instrument is monitored by the SPDS; therefore, the SPDS monitors all scenarios that the instruments themselves are qualified to monitor. The acceptability of these ranges is confirmed through the Control Room Design Review and the System Function/Task

Analysis. The ability of the ERF/SPDS Computer System to monitor the instrument ranges was verified as part of the V&V Program and by CPSES preoperational test 1CP-PT-78-01.

6. "... additional discussion should be provided to relate the bases for variable selections to the ERG's and to describe a program to validate the list of SPDS variables."

Response:

The CPSES ERFCS Safety Analysis Report will be revised to include a discussion relating the selected variables to the site specific ERG's.