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October 24, 1985
ST-HL-AE-1448
File No.: G9.17

Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Responses to DSER/FSAR Items
Concerning the Control Room Design Review

Dear Mr. Knighton:

The attachment enclosed provides STP's response to Draft Safety Evaluation Report (DSER) or Final Safety Analysis Report (FSAR) items.

The item numbers listed below correspond to those assigned on STP's internal list of items for completion which includes open and confirmatory DSER items, STP FSAR open items and open NRC questions. This list was given to your Mr. N. Prasad Kadambi on October 8, 1985 by our Mr. M. E. Powell.

The draft SER Chapter 18 (Human Factors Engineering) identifies four (4) items on which the NRC requests resolution to satisfactorily complete the South Texas detailed control room design review (CRDR) activities. These are:

1. Provide the results of the verification and validation program for the final emergency operating procedures (EOPs) to confirm that the instrumentation and control needs have been adequately identified and satisfied.

2. Provide the results of the investigation of the green Roto-tellite indication lights in the control room under natural operating conditions.

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3. Resolve Category D HEDs relative to providing dual filament indication light bulbs, or double bulbs, or bulb-testing capabilities.

4. Provide the results of the surveys of the lighting, sound, meter, and communication system when planed work in the control room is completed.

Items 1, 2, and 4 are commitments made by HL&P in the CRDR Executive Summary, Addendum 1, which was submitted by ST-HL-AE-1228 dated April 15, 1985. Item 3 is discussed in the CRDR Human Engineering Discrepancy Resolution Report originally submitted by ST-HL-AE-1228 dated April 15, 1985. Pages of this report were revised to address NRC comments and were submitted by ST-HL-AE-1342 dated September 4, 1985.

These remaining CRDR activities are dependent on control room readiness and cannot be completed until 1986. The CRDR Executive Summary Report commits to a supplementary executive summary report submittal to conclude CRDR reporting within three months of completion of fuel loading. The attachment details our plans for completion of these items and addresses HL&P's position on item 3. This should serve to resolve any NRC concerns relative to close out of the four items in the draft SER.

The items which are attached to this letter are:

Attachment	Item No.*	Subject
1	D 18.0-1 thru 4	Control Room Design Review

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

Very truly yours,

M. R. Wisenburg
Manager, Nuclear Licensing

MEP/vmq

Attachments: See above

* Legend
D - DSER Open Item
C - DSER Confirmatory Item
F - FSAR Open Item
Q - FSAR Question Response Item

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cc:

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Attachment 1
ST-HL-AE-1448
File No.: G9.17

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Responses to DSER/FSAR Items
Concerning the Control Room Design Review -
Resolution of Draft SER Chapter 18 Open Items

Item 1:

Provide the results of the verification and validation program for the final emergency operating procedures (EOPs) to confirm that the instrumentation and control needs have been adequately identified and satisfied.

STP Response:

The program for Verification and Validation (V&V) of the Emergency Operating Procedures was described in the STP Procedures Generation Package submitted by letter ST-HL-AE-1266, dated June 14, 1985.

Emergency Operating Procedures are verified in two processes, one is accomplished using the "Emergency Procedure Writer's Guide and Verification" procedure. This process involves review by Shift Supervisors and other Operations Supervisors, focusing on operational accuracy. The second process outlined in the plant procedure, "EOP Preparation, Approval, and Implementation", involves the Quality Assurance, Engineering, and Training Divisions. This process focuses on technical accuracy and additional operation review. Copies of those two procedures were included as part of the procedures generation packages.

Validation of the EOP's will be accomplished using methods outlined in INPO document 83-006 "Emergency Operating Procedures Validation Guidelines".

The purpose of the V&V program is to detect and document discrepancies. When a discrepancy is identified, a resolution will be developed to correct the deficiency. The solution to some discrepancies may involve correcting the procedure, while others may be addressed by increasing the level of operator training. Human Engineering Discrepancies (HEPs) will be written to document resolutions requiring design changes. The final resolution will also be documented. The verification of the EOP is not complete until the discrepancies have been resolved. The EOP preparation & validation package will be available for NRC review at the STP site. Any resulting HEDs and their corrective action will be reported in the Supplementary CRDR Executive Summary.

Item 2:

Provide the results of the investigation of the green Roto-tellite indicating lights in the control room under actual operating conditions.

STP Response:

As stated in the CRDR Executive Summary, the visibility of the green Roto-tellite indicating lights will be checked after completion of the control room lighting. The initial measurements of intensity of the Roto-tellites were made on the STP training simulator in the vendor's lab and are not considered representative. On completion of the STP control room lighting, the control room lighting level will be reduced in gradual steps to a level where visual effectiveness is adequate for task performance and the light intensity of the illuminated Roto-tellite light is at least 10% greater than the surrounding panel area.

The lighting level in the primary control panel operating area will not be reduced below the minimum level of 20 foot candles as recommended in the CRDR Criteria Report, Appendix D. Random lighting measurements will be taken using a portable Freund luminance spot meter.

Item 3:

Resolve Category D HEDs relative to providing dual filament indicating light bulbs, or double bulbs, or bulb-testing capabilities.

STP Response:

During the STP CRDR assessment and implementation phase, Human Engineering Discrepancies (HEDs) were categorized commensurate with the significance of the HED. Implementation requirements were then defined. Category A, B, and C HEDs assessed as having safety consequences, availability enhancement, or reliability enhancement respectively were analyzed for correction. Correction of Category D results were optional. This assessment and implementation methodology is outlined in the CRDR Program Plan and the Executive Summary. The justification for categorizing the subject HED on bulb test capability or dual bulb/dual filament as Category D was incorporated into the revision to the HED Resolution Report.

The indicating lights which are the subject of this HED are GE ET16 lamps used in the STP control room and throughout the industry to indicate component status. Two ET-16 Lamps (one red and one green) are located above the component control switch. The component control circuits are designed such that one lamp is lit at all times providing the operator with unambiguous indication. Additional backup information is also available to the operator through the ESF Status Monitoring System and the ERF and plant computer displays.

This design is consistent with the approach taken throughout the industry. As we indicated, HL&P will continue to monitor the industry for appropriate application of proven techniques.

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Item 4:

Provide the results of the surveys of the lighting, sound, meter, and communication system when planned work in the control room is completed.

STP Response:

The CRDR Executive Summary Report commits to completion of Category E criteria after completion of the control room including lighting and communication system testing and operation.

The Control Room normal and emergency lighting systems are designed in accordance with the requirements of the CRDR Criteria Report, Appendix D - Control Room Environment Guidelines. The Control Room lighting systems will be tested and evaluated utilizing the checklists inn the CRDR Control Room Survey Report, Volume IV, Appendix J.

The Control Room environment is designed in accordance with the requirements of the CRDR Criteria Report, Appendix D - Control Room Environment Guidelines The Control Room environment will be tested and evaluated utilizing the checklists in the CRDR Control Room Survey Report, Volume IV, Appendix J.

Control Room visual displays are designed in accordance with the requirements of the CRDR Criteria Report, Section 6.3; Appendix G - Meters Displays Guidelines and Special Studies - Meter Scales.

The Control room meter scales will be evaluated utilizing the checklists in the CRDR Control Room Survey Report, Volume IV, Appendix N.

The Control Room Communications System is designed in accordance with the requirements of the CRDR Criteria Report, Section 7.0. The Control Room Communications System will be tested and evaluated utilizing the checklists to the CRDR Control Room Survey Report, Volume IV, Appendix K.

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