

# The Light company

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June 17, 1985  
ST-HL-AE-1273  
File No.: G4, G9

Mr. George W. Knighton, Chief  
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Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

South Texas Project  
Units 1 & 2  
Docket Nos. STN 50-498, STN 50-499  
Closeout of ICSB Meeting Items

Dear Mr. Knighton:

During the week of March 26 through March 29, 1985, representatives of the NRC Instrumentation and Control Systems Branch (ICSB) met with representatives of HL&P and Bechtel to discuss issues and questions regarding the STP instrumentation and control. Meeting notes for this meeting were provided to the NRC via letter ST-HL-AE-1239 dated May 13, 1985.

The resolution of three open items from that meeting, concerning the main steam isolation valve (MSIV) circuit, the main feedwater isolation valve (MFIV) testing, and balance of plant isolation device testing, are provided as Attachments 1, 2 and 3 to this letter. These correspond to three action items which were noted on Attachment 5 to ST-HL-AE-1239 and were identified as "New MSIV", "New MFIV" and number 5, respectively, in the lefthand column of the item list.

In addition to the resolution of the first two open items, the logics and elementary diagrams (also attached) were reviewed and revised as necessary for the following:

- a. Consistency between the two applications regarding the testing procedure and the indication of test completion to the operator; and
- b. Reaction of the subject valves to loss of electrical power and its subsequent restoration.

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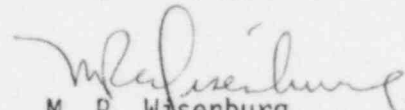
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DRAWINGS TO  
Pm 2 SETS  
C. Files 1 SET

Boo!  
1/3 sets of drawings

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

Very truly yours,

  
M. R. Wisenburg  
Manager, Nuclear Licensing

CAA/as

- Attachments:
- (1) Discussion of Main Steam Isolation Valve Circuit
  - (2) Discussion of Main Feedwater Isolation Valve Testing
  - (3) Discussion of Balance of Plant Isolation Device Testing
  - (4) Drawings (as noted in Attachments 1 and 2)

cc:

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Note: All of above copies  
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Washington, DC 20555

South Texas Project  
Units 1 & 2  
Docket Nos. STN 50-498, STN 50-499  
Main Steam Isolation Valve Circuit

Open Item:

During review of the MSIV schematic, concern was raised about a possible failure in the circuit, specifically regarding the "open permissive" switch contact remaining closed. This closed contact is not detected during block testing, and would only be detected during the actuate test, which is performed at a less frequent interval. This closed contact would prevent the safeguards signal of its train from effecting closure of the MSIV. This potential failure and its failure detection method should be addressed.

Reference Drawings (reviewed during the ICSB meeting and provided informally to NRC):

Logic: 9Z40076 Rev. 3  
Elementary: 9-E-MS13-01 Rev. 1  
9-E-MS13-02 Rev. 1  
9-E-MS13-03 Rev. 1

Resolution:

Failure of either control room switch in question (refer to STP drawings 9-E-MS13-01 and 9-E-MS13-02, switches HS-7414A and HS-7414B) is detected during actuate testing. This testing is performed at a frequency consistent with that of other projects and will be reflected in the Technical Specifications. Each of these control room switches is a qualified class 1E switch. Should this contact failure occur in one of the switches, the MSIV would still be closed by venting the air through use of the other train's circuit. Simultaneous contact failure in both circuits is not considered credible.

STP will however modify the circuits so that this switch contact is in series with the isolation signal contacts rather than in parallel. In this way the postulated contact failure cannot prevent the safeguards signal from effecting closure of the MSIV.

The following revised logic and elementary diagrams are attached:

Logic: 9Z40076 Rev. 4  
Elementary 9-E-MS13-01 Rev. 2  
9-E-MS13-02 Rev. 2  
9-E-MS13-03 Rev. 2

South Texas Project  
Units 1 & 2  
Docket Nos. STN 50-498, STN 50-499  
Main Feedwater Isolation Valve Testing

Open Item:

During testing, operation of both solenoids for venting the hydraulic fluid (which causes the MFIV to fail in the closed position) is not monitored to assure proper operation.

Reference Drawings (reviewed during the ICSB meeting and provided informally to NRC):

Logic: 9Z40116 Rev. 2  
Elementary: 9-E-FW07-01 Rev. 1  
9-E-FW07-02 Rev. 0  
9-E-FW07-03 Rev. 0

Resolution:

Prior to the identification of this concern the 90 percent limit switch contact from the MFIV was the only test input required to illuminate the white test light. In order to verify that the solenoids have both been de-energized and opened, the circuit will be modified to use limit switch contacts from the solenoids as well as the 90 percent limit switch from the MFIV to illuminate the white light that indicates successful completion of the valve test.

When testing the circuit during plant operation, the temperature and flow interlocks will be satisfied. When the solenoids are de-energized and open and the MFIV has closed down to 90 percent open or less, the white light will be illuminated. (Since the MFIV is then in an intermedite position, the green light will also be illuminated during the time the MFIV is partially closed.) Illumination of the white light will then verify satisfactory operation of the MFIV and both of the hydraulic fluid solenoids.

The following revised logic and elementary diagrams are attached:

Logic: 9Z40116 Rev. 3  
Elementary 9-E-FW07-01 Rev. 2  
9-E-FW07-02 Rev. 1  
9-E-FW07-03 Rev. 1  
9-E-FW07-04 Rev. 0

South Texas Project  
Units 1 & 2  
Docket Nos. STN 50-498, STN 50-499  
Balance of Plant Isolation Device Testing

Open Item:

Describe design criteria and tests performed on the isolation devices in the balance of plant systems. Address results of analysis or tests performed to demonstrate proper isolation between separation groups and between safety and non-safety systems.

Provide results of tests or, if no testing has been performed, provide rationale for testing not being done.

Resolution:

The various devices used as isolation devices in STP have been used as isolation devices in other nuclear power plants previously licensed in the United States and abroad.

Each of the isolation devices used to accomplish electrical isolation in the balance of plant (BOP) scope will perform its intended design function and is tested as follows:

- 1) Digital (optical) and analog (transformer coupled) isolators are furnished in the emergency response facility data acquisition display system (ERFDADS) computer inputs. Tests were performed as follows: 1500-V ac high potential dielectric; 3000-V dc insulation resistance; and IEEE 472 surge withstand capability. Preliminary test results show that the application of the IEEE 472 waveform to any terminal of the device (or any combination of terminals) does not compromise the isolators ability to isolate in any way. The final test results will be made available to the NRC ICSB upon request, once they are accepted by the project.
- 2) The digital isolators (optical) in the radiation monitoring computer system are presently being tested. The tests are similar to those performed on the ERFDADS isolation devices.  
  
The test results will be made available to the NRC ICSB upon request once they are accepted by the project.
- 3) The digital isolators in the diesel generator control panels will be tested in the same manner as described above. The test results will be made available to the NRC ICSB upon request once they are accepted by the project.

4) Isolation Relays

Auxiliary relays serving as isolation devices are barrier-mounted Potter and Brumfield Type MDR rotary relays. The barrier effectively isolates the coil and contact wiring. As part of the auxiliary relay panel environmental qualification program, a high potential dielectric test (1000 volts + two times nominal voltage for 1 minute or the above + 20% for 1 second) is performed. Test results will be made available to the NRC ICSB upon request once they are accepted by the project.

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\* OVERSIZE DUPLICATE DRAWINGS

SEE APERTURE CARDS

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AVAILABILITY  PDR  CF  HOLD

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