

(twice for both the 1A and 1B emergency diesel generators at Vogtle, and once for each emergency diesel generator at River Bend).

**Bubble Leak Test:** Leak testing was performed in two phases. The first phase consisted of bubble testing. The emergency diesel generator was started via an emergency start signal to prevent it from tripping when individual pneumatic sensing lines were disconnected during the test. A bubble tester is connected in series with the 60 psig air supply to the sensing line being tested. Once the tester is connected and the line has repressurized, the air supply to the sensor is rerouted through a water filled sight glass. Any leaks in the sensing line downstream of the engine control panel or at the sensor are revealed by air bubbles flowing from the supply through the water to the leak location. After the test, the tester is removed and the air line that was broken to install the tester is reconnected. The second phase of leak testing involves application of snoop leak-detector solution to the reconnected air line fittings to verify they are tight and not leaking. The leak testing was performed on March 30 and March 31, 1990.

Twelve pneumatic sensing lines are provided for the emergency diesel generator trip parameters listed in Table 3.1. The lines associated with the three jacket water temperature sensors were the last to be tested. A jacket water temperature sensor malfunction alarm was received when the emergency diesel generator was started, indicating that one of the sensors may be venting. When the first of the three lines was disconnected to install the bubble tester, the emergency diesel generator tripped. A trip is normally an unexpected response because the jacket water high temperature trip function uses a 2-out-of-3 logic; venting a single sensing line should not cause a trip. The trip confirmed that a problem existed in one of the other sensing lines or sensors. For troubleshooting purposes, gauges were installed in the three sensing lines to monitor the air pressure at the sensor inputs, and the diesel generator was restarted. Restart of the diesel generator with all lines connected revealed that one sensor was venting (sensor ITSH-19111) and that another sensor (ITSH-19112) was leaking. The venting sensor was correctly sensed by the logic as a trip condition. Disconnecting the sensing line to install the bubble tester had caused a second line to be vented, which satisfied the trip logic and resulted in the trip. The air line to the venting sensor was crimped, to allow air pressure to build, and subsequently released to pulse the sensor with air pressure. This sequence was repeated several times, causing the venting sensor to reset, sealing off its vent port, and allowing its sensing line to repressurize. Sensors ITSH-19111 and ITSH-19112 were quarantined by the Team and were replaced later on March 31, 1990. The leak testing on the jacket water temperature sensing lines was completed after the new sensors had been installed. All three jacket water temperature sensors had been recalibrated earlier on March 30, 1990, (before the leak testing) as part of a temperature sensor recalibration effort initiated because of inconsistencies found in previous calibrations. The licensee's investigation of temperature sensor calibration and performance is addressed later in this section. Except for the temperature sensors, no significant leaks were identified during the leak testing.

NUCLEAR REGULATORY COMMISSION  
Docket No. 50-424 & 425-OLA-3 EXHIBIT NO. I-192  
In the matter of SA. FOWNE/VOGTLE  
☐ Staff ☐ Applicant ☒ Intervenor ☐ Other  
☒ Identified ☒ Received ☐ Rejected Reporter WLW  
Date 8-9-95 Witness MOSBAUGH

Appendix J

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