

LICENSEE EVENT REPORT (LER)

Form Rev. 2.0

Facility Name (1) Quad Cities Unit One	Docket Number (2) 0   5   0   0   0   2   5   4	Page (3) 1   of   0   4
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Title (4)  
The Technical Specification Required Pressure Was Not Met During Local Leak Rate Testing Due To A Procedural Deficiency

Event Date (5)			LER Number (6)			Report Date (7)			Other Facilities Involved (8)			
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)		
0   6	0   7	9   6	9   6	- 0   0   8	- 0   0	0   6	2   7	9   6		0   5   0   0   0   2   6   5		
OPERATING MODE (9) 1												

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

POWER LEVEL (10)	0   0   0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	<input type="checkbox"/> Other (Specify in Abstract below and in Text)
		20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Nick Chrissotimos, Regulatory Assurance, Ext. 3100	AREA CODE 3   0   9   6   5   4   -   2   2   4   1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
D	V   B								

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	Expected Submission Date (15)	Month	Day	Year
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

ABSTRACT:

To determine the applicability of Information Notice (IN)96-13, "Potential Containment Leak Paths Through Hydrogen Analyzers", a review of the Station's procedure for leak rate testing of the Hydrogen Analyzer Panels [IK] was performed. Based on the procedure review, it was concluded that the Analyzer's isolation check valves had not been tested at the required Tech Spec pressure due to an inadequate vent path.

The root cause is a procedure deficiency. Procedure changes have been submitted and the check valves were retested using appropriate vent paths.

The safety significance was minimal since the flow path (from containment) was within a closed system (i.e. does not vent to secondary containment). The release rate limits (10CFR 100) would not have been exceeded.

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TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]

**PLANT AND SYSTEM IDENTIFICATION:**

General Electric - Boiling Water Reactor - 2511 Mwt rated core thermal power.

**EVENT IDENTIFICATION:** The Technical Specification required pressure was not met during local leak rate testing due to a procedural deficiency.

**A. CONDITIONS PRIOR TO EVENT:**

Unit: 1                                      Event Date: June 7, 1996                                      Event Time: 1700  
 Reactor Mode: 1                                      Mode Name: Shutdown                                      Power Level: 00%

This report was initiated by Licensee Event Report 254\96-008.

SHUTDOWN (1) - In this position, a reactor scram is initiated, power to the control rod drives is removed, and the reactor protection trip systems have been de-energized for 10 seconds prior to permissive for manual reset.

**B. DESCRIPTION OF EVENTS:**

NRC Information Notice (IN) 96-13 "Potential Containment Leak Paths Through Hydrogen Analyzers" recommended that the Licensee's should review their Local Leak Rate Test (LLRT) procedures to determine if Hydrogen Analyzer Panels [IK] are tested in the energized/or de-energized state. On June 6, 1996, to determine the applicability of IN 96-13, a review of procedure QCTS 0600-34, "Containment Atmosphere Monitoring (CAM) System, H2/O2 Analyzer 2251(2)-81A/B, Inlet Sample Lines and CK-1(2)-2499-22A/B Local Leak Rate Test," was performed. Based on the procedure review, it was concluded that the CAM panel containment isolation check valves [ISV] had not been tested at the required Technical Specification pressure of 48 pounds per square inch gauge (psig).

QCTS 0600-34 is currently performed when the CAM panel is in standby mode, which places the solenoids in a de-energized (closed) condition. When testing CAM check valves 1(2)-2498-8A/B, 11A/B, 14A/B, and 17A/B (which are internal to CAM panels 2251(2)-81A/B), the fittings at the calibration gas bottles are disconnected to provide a vent path. Solenoid valves [SOL] SO 1(2)-2498-6A/B, 9A/B, 12A/B, and 15A/B are also part of the same vent path (refer to Attachment A). During the performance of QCTS 0600-34, at least 48 psig of air pressure is applied to the outlet port of the solenoid (refer to Attachment B).

The Station performed a bench test to determine the force required to lift the solenoid core (to provide vent path) on a spare 2-way solenoid valve. The spare was identical to the solenoid currently installed in the 2251(2)-81A/B CAM panels. The test was performed at 50 psig. Based upon this test data, it was determined the solenoid valve produced a resulting back pressure of 35 psig. The net effect being that the check valves were tested at approximately 15 psig and not the Tech Spec required 48 psig.

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TEXT Energy Industry Identification System (EIS) codes are identified in the text as (XX)

History indicates that Leak Rate Testing of CAM panels 2251(2)-81A/B originally used procedure QTS 100-47, "Local Leak Rate Test of Containment Atmosphere H<sub>2</sub>/O<sub>2</sub> Monitoring Panels," which was approved for use on July 19, 1985. The first revision of the current procedure, QCTS 0600-34, went into affect on March 11, 1994.

**C. CAUSE OF THE EVENT:**

The root cause of the event is a procedure deficiency, in that it did not ensure an appropriate vent path during the procedural valve line up.

**D. SAFETY ANALYSIS:**

The safety significance of this event was minimal. Using the design basis Loss of Coolant Accident (LOCA) with 48 psig in the containment, the worst case would be the that check valves 1(2)-2498-8A/B, 11A/B, 14A/B, and 17A/B failed open. Even under these conditions the 10CFR 100 release rate limits would not have been exceeded and primary containment would be maintained. The CAM flow path is a closed system, and would be as follows:

1. 48 psig from the drywell
2. To the solenoids which would be OPEN. The 2251(2)-81A/B starts on Core Spray Initiation Logic which energizes (opens) the solenoids.
3. Once the solenoids open, gas would be regulated from the hydrogen/oxygen bottles (pressurized at approximately 2000 psig) to approximately 35 psig for CAM operation.
4. The 48 psig pressure from the drywell would flow from the hydrogen/oxygen bottle gas regulators to the bottles themselves for approximately 10 seconds. The excerpt from the Tech Spec Bases Section 4.7.A. states, "the peak drywell pressure (during a LOCA) would be 48 psig which would reduce rapidly to 25 psig in 10 seconds." After the 10 seconds the gas pressure from the hydrogen/oxygen bottles, at 35 psig, would be greater than the drywell pressure of 25 psig.

The gas bottles and the supply lines are not Appendix J leak rate tested, leak tightness of the bottles/lines is checked on a daily basis during Operator rounds.

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### E. CORRECTIVE ACTIONS:

#### Corrective Actions Completed:

1. Problem Information Form (PIF) 96-2053 was written as a result of the IN 96-13 review.
2. Panels 2251-81A/B and 2252-81A/B were leak rate tested on June 8, 1996 and June 12, 1996, respectively. The panels were tested using a revised procedure (QCTS 0600-34 PFC 2540) that ensured a vent path to atmosphere. (Refer to Attachment C). The panels tested satisfactory.
3. A review of the entire series of LLRT procedures (QCTS 0600 series) determined this was the only procedure with a improper vent path.
4. The LLRT Test Director training Lesson Plan was revised to ensure the trainees understand the need for an obvious (and direct) vent path, and reasons why a test will be invalidated if an appropriate vent path does not exist. A discussion of this LER was included.

Corrective action to be completed include the following:

1. Procedure QCTS 0600-34 will be revised to ensure an appropriate vent path exists when leak rate testing the 2251(2)-81A/B panels (NTS #2541809600801 Support Engineering). Due October 1, 1996.

### F. PREVIOUS EVENTS:

The following similar LER occurred in 1990.

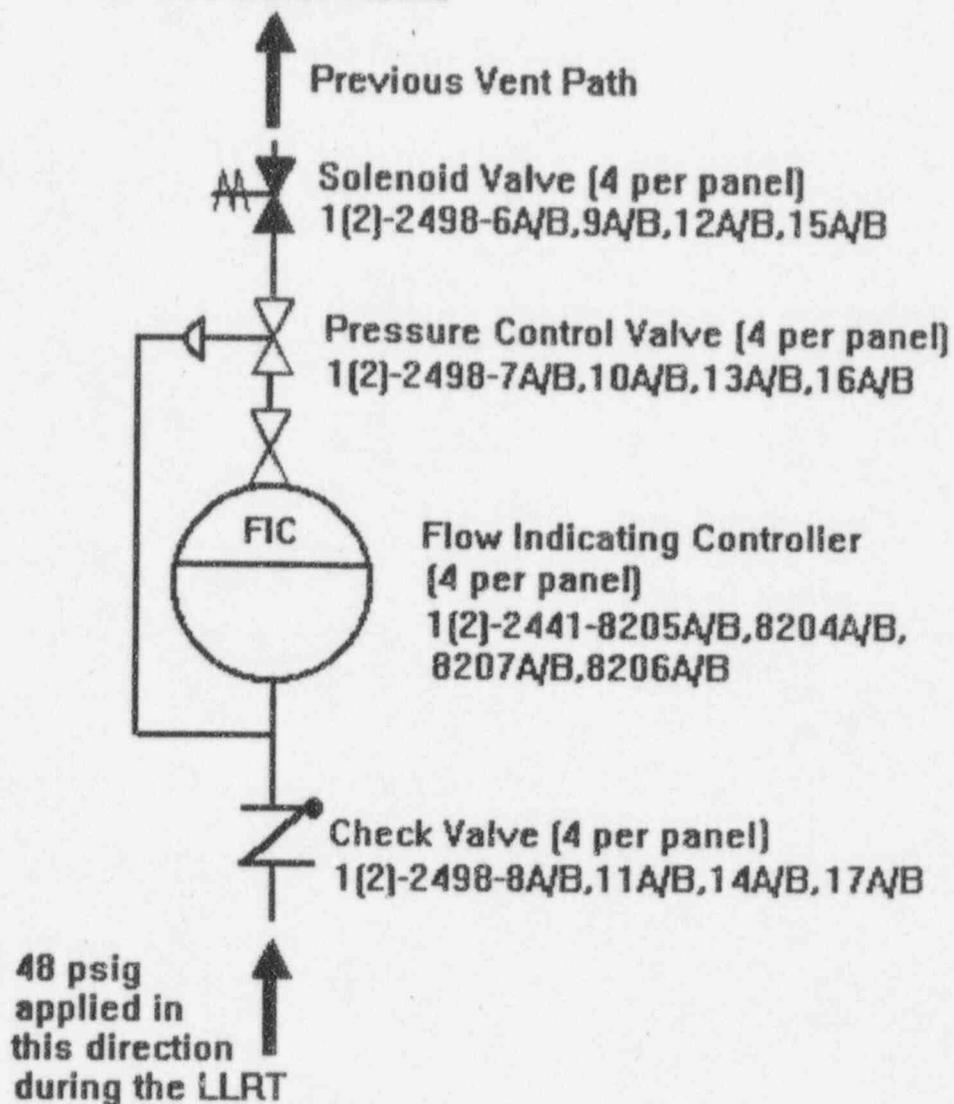
254/90-001 Seven Pathways Were Not Included in the Type B and C Local Leak Rate Testing Program Due to a Recent Interpretation of 10CFR50 Appendix J.

### G. COMPONENT FAILURE DATA:

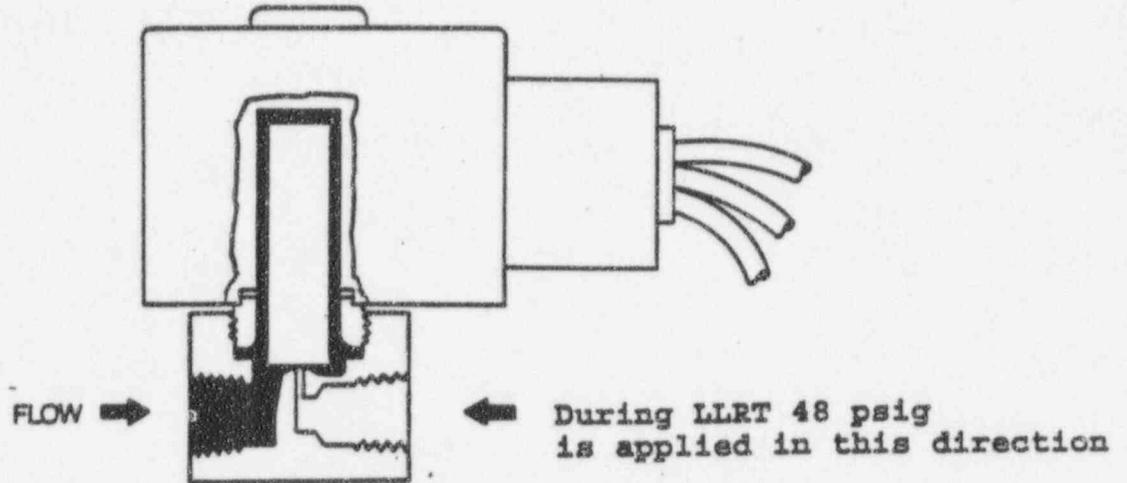
There was no component failure associated with this event. The manufacture data for the solenoid valves involved with this event is as follows:

Manufacturer: ASCO  
 Model/Number: THT-8262C7N  
 Type: Direct acting, 2-way solenoid valve

To Gas Bottle Racks



ATTACHMENT B



DE-ENERGIZED STATE FOR DIRECT ACTING SOLENOID  
(SO 1(2)-2498-6A/B, 9A/B, 12A/B, 15A/B)

To Gas Bottle Racks

