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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Description

NRC Form 366A

On February 14, 1989 at 1400 hours, a Technical Specification (TS) violation was discovered at Calvert Cliffs Unit 1 in that Mode 4 was entered without the Containment Purge Exhaust Isolation valves (CV1412 and CV1413) air supply solenoid valves in the deenergized state. The TS violation (TS 3.6.1.7, "Containment Purge System") first occurred in May 1987, and has had a duration of approximately 20 months. The violation was a result of improperly preparing the request to deenergize the valves and the incorrect performance of the surveillance that would have detected the problem.

NUREG-0737 was issued in 1980 to address post TMI requirements. Under NUREG-0737 the NRC directed utilities to satisfy the requirements for Containment Isolation Dependability as stated in Section II.E.4.2 Containment Purge valves were required to be operable (Branch Technical P. sition CSB 6-4, or the Staff Interim Position of October 23, 1979), or must be closed (SRP 6.2.4). Baltimore Gas and Electric elected to keep the containment purge supply and exhaust isolation valves closed. This decision was made due to concerns with the capability of the valves to close under post-LOCA conditions. A license amendment was approved on February 1, 1982, establishing TS 3.6.1.7. This Technical Specification describes how the containment purge valves are maintained closed in Modes 1 through 4.

There are two Containment Purge Supply and two Containment Purge Exhaust Isolation valves per unit at Calvert Cliffs. The valves are 48" air operated butterfly valves. Each Containment Purge Isolation valve operator has a manual air isolation valve and an air supply solenoid valve. TS 3.6.1.7 states, "the containment purge supply and exhaust valves shall be closed by isolating air to the air operator and maintaining the solenoid air supply valve deenergized."

To satisfy TS 3.6.1.7, the manual air isolation values are closed and tagged, and the electrical leads to the solenoid air supply values are disconnected (lifted) for each containment purge value (figure 1). The surveillance requirement for TS 3.6.1.7 is performed monthly and before changing from Mode 5 to Mode 4 using Surveillance Test Procedure (STP) 0-55 ("Containment Integrity Verification").

In 1984, Facilities Change Request (FCR) 84-1072 was issued to modify the electrical schemes for the Hydrogen Purge and Containment Purge Isolation Exhaust valves in both Unit 1 and Unit 2. This modification added relays to the electrical schemes of Containment Purge Exhaust Isolation valves CV1412 and CV1413. The new relays were installed to provide Engineered Safety Features Actuation Signals (ESFAS) to the Hydrogen Purge valves (figure 2). Adding the new relays changed the points at which the electrical leads are lifted to satisfy TS 3.6.1.7 (figure 3). On February 14, 1989, the E&C section determined the wrong leads had been lifted on the Containment Purge Exhaust Isolation valves, CV1412 and CV1413. The wrong leads were lifted on November 6, 1988.

The error was discovered by an E&C planner who was preparing a request to have the leads lifted during an upcoming Unit 1 outage. The planner was using a newly revised procedure that requires individuals preparing lifted lead requests to consult and attach applicable drawings to the request. When the planner compared

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his correct request with the existing request on file he noticed the wrong leads had been lifted. The planner physically verified this in the plant.

The TS violation occurred when Unit 1 entered Mode 4 with the wrong leads lifted (due to incorrectly filling out the lifted lead requests) and when E&C personnel performing STP-O-55 failed to verify the correct leads were lifted. There were no other components or systems which were inoperable and/or out-of-service which contributed to this event. No system or component failures resulted from this event. The leads that were lifted disabled the ESFAS inputs to the Containment Firge Exhaust Isolation Valves and the Hydrogen Purge Valves.

Cause of Event

NRC Form 366A

The primary cause of the event has been determined to be personnel error by technicians in the E&C section. FCR 84-1072 was issued to modify the Containment Purge and Hydrogen Purge valve's electrical schemes. As part of the FCR process, drawing change notices(DCNs) were created to show the modifications until the actual drawings were updated. It cannot be determined whether the individuals preparing the lifted lead requests did not have access to outstanding DCNs or simply failed to use them if they were available. In either case, the wrong leads were lifted because the current drawings were used without the aid of DCNs.

There were even some cases where individuals prepared lead requests by simply copying previous requests. Until January 1989, this practice did not violate procedures since the lifted lead procedure did not require the use of drawings and DCNs. The lack of procedural guidance in requiring the use of all drawings is a secondary cause of this event.

Additionally, the E&C technicians performing STP-0-55 did not verify the proper leads were lifted. Some technicians felt the leads lifted at the time were correct and the STP was wrong. Other technicians would note that there were leads lifted for the valves under a lifted lead request without consulting the STP. Because the lifted lead requests were generated by E&C personnel and the STP wasn't (STP-0-55 is an Operations procedure), technicians would follow the lifted lead request and not the STP. When individuals did note the differences between the leads actually lifted and the STP, they failed to determine which one was correct.

Ana, sis of Event

This event is considered reportable in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the Plant's Technical Specifications." In accordance with TS 3.6.1.7, power to the solenoid values for the Containment Purge Vilues is to be removed prior to entering Mode 4 and then verified removed once every 31 days.

A revie of past lifted lead requests for the Containment Purge Isolation values indicat s the wrong leads were first lifted in May 1987. Except for a brief one month priod in 1988, the wrong leads were lifted while Unit 1 was in Modes 1-4 from May 1987 until the event discovery date of February 14, 1989. The individual who prepared the correct request in 1988 used the STP to determine the correct LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMB NO. 2150-0104

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leads to lift. The surveillance for TS 3.6.1.7 was not performed properly during the same time period.

Although the leads needed to energize the solenoid valves were not lifted during this period, the probability of opening CV1412 or CV1413 in Modes 1-4 was extremely low due to the fact that the manual air supplies and the Control Room handswitches were tagged for the valves. The handswitches are normally tagged as an extra precaution to prevent opening the valves.

The incorrect leads that were lifted disabled the ESFAS (Containment Purge Isolation) inputs to CV1412 and CV1413 as well as the Hydrogen Purge valves. Containment Purge Isolation is only required in Technical Specifications in Mode 6 thus the loss of these inputs in Modes 1-4 is not a safety concern. The Hydrogen Purge valves are maintained in the closed position by TS 3.6.1.8 during Modes 1-4 and would not be affected by a loss of ESFAS signal. In each instance, upon entering Mode 5 from Mode 4, the incorrect leads were reconnected and the ESFAS signal was available as required by the Containment Purge Isolation TS.

It is concluded that there were no significant safety consequences resulting from this event. This is because the containment Purge Isolation valves are not used in Modes 1-4 and were prevented from opening by tagging closed the manual air isolation valves and by tagging shut the control room handswitches.

Corrective Actions

NRC Form 366A

Immediate corrective action for this event was to reconnect the ESFAS leads, lift the appropriate leads for CV1412 and CV1413, and verify that the proper leads were lifted for the Containment Purge Isolation Supply valves. This placed the Unit back into compliance with TS 3.6.1.7.

Additional corrective actions include:

- 1. STP-0-55 will be revised to include the correct leads that should be lifted.
- 2. As the result of a BG&E initiative not related to this event, the lifted lead request procedure was revised in January 1989. The current procedure now requires a review of all applicable drawings and DCNs and attach them to the request package.
- Training was conducted for E&C personnel in mid-October 1988 to stress the importance of procedural compliance.
- Training will be conducted with all E&C personnel to review this event and stress the need for personnel to ask questions when information is conflicting.
- 5. E&C personnel who were involved with the incorrect lifted lead requests and STPs will be counseled on the events.

NAC FORM 3864

NRC Form 366A	EPORT (LER) TEXT CONTIN	US NUCLEAR F UATION APPROVED EXPIRES: 8	REGULATORY COMMISSION D OMB NO: 3150-0104 //31/88
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Additional Information			
No similar events have been rep of components, systems, and the	ported at Calvert Cliff eir appropriate EIIS Co	fs. The following is ode.	a list
System		EIIS CODE	
Containment Purge		JM	
Hydrogen Purge		BB	
Air Supply		LF	
Components		EIIS CODE	
Isolation Valves		ISV	
Hydrogen Purge Valve		FCV	
Air Solenoid Valve		FSV	
Control Room Hand Switch		HS	
Relay		RLY	







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CHARLES CENTER . P.O. BOX 1475 . BALTIMORE, MARYLAND 21203

CALVERT CLIFFS NUCLEAR POWER PLANT DEPARTMENT CALVERT CLIFFS NUCLEAR POWER PLANT LUSBY, MARYLAND 20657

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March 16, 1989

U.S. Nuclear Regulatory Commission Document Control Desk Washington, DC 20555 Docket No. 50-317 License No. DPR 53

Dear Sirs:

The attached LER 89-002 is being sent to you as required by 10 CFR 50.73.

Should you have any questions regarding this report, we would be pleased to discuss them with you.

Very truly yours,

L. B. Russell ' Manager-Calvert Cliffs Nuclear Power Plant Department

LBR:MDM:sba

cc: William T. Russell Director, Office of Management Information and Program Control Messrs: G. C. Creel L. B. Russell C. H. Cruse

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