

## LICENSEE EVENT REPORT (LER)

(See reverse for required number of  
digits/characters for each block)ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY  
INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE  
INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY.  
FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND  
RECORDS MANAGEMENT BRANCH (T-4 F33), U.S. NUCLEAR REGULATORY  
COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION  
PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC  
20503

FACILITY NAME (1)

Cook Nuclear Plant Unit 1

DOCKET NUMBER (2)

05000-315

PAGE (3)

1 of 4

TITLE (4)

Control Room Pressurization System Surveillance Test Does Not Test System In Normal Operating Condition

| EVENT DATE (5)        |     |      | LER NUMBER (6)  |                      |                    |       | REPORT DATE (7)   |      |   | OTHER FACILITIES INVOLVED (8)                    |  |
|-----------------------|-----|------|---|----------------------|--------------------|-------|-------------------|------|---|--|--|
| MONTH                 | DAY | YEAR | YEAR  | SEQUENTIAL<br>NUMBER | REVISION<br>NUMBER | MONTH | DAY               | YEAR | FACILITY NAME                                       | DOCKET NUMBER                                    |  |
| 01                    | 07  | 1999 | 1999  | 003                  | 00                 | 02    | 24                | 1999 | D.C. Cook, Unit 2                                   | 05000-316  |  |
| OPERATING<br>MODE (9) |     |      | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11) |                      |                    |       |                   |      |   |  |  |
| 5                     |     |      | 20.2201 (b)   |                      |                    |       | 20.2203(a)(2)(v)  |      | <input checked="" type="checkbox"/> 50.73(a)(2)(i)  | 50.73(a)(2)(viii)                                |  |
| POWER<br>LEVEL (10)   |     |      | 20.2203(a)(1)   |                      |                    |       | 20.2203(a)(3)(i)  |      | <input checked="" type="checkbox"/> 50.73(a)(2)(ii) | 50.73(a)(2)(x)                                   |  |
| 0%                    |     |      | 20.2203(a)(2)(i)  |                      |                    |       | 20.2203(a)(3)(ii) |      | 50.73(a)(2)(iii)                                    | 73.71  |  |
|                       |     |      | 20.2203(a)(2)(ii)   |                      |                    |       | 20.2203(a)(4)     |      | 50.73(a)(2)(iv)                                     | OTHER  |  |
|                       |     |      | 20.2203(a)(2)(iii)  |                      |                    |       | 50.36(c)(1)       |      | 50.73(a)(2)(v)                                      | Specify in Abstract below<br>or on NRC Form 366A |  |
|                       |     |      | 20.2203(a)(2)(iv)   |                      |                    |       | 50.36(c)(2)       |      | 50.73(a)(2)(vii)                                    |  |  |

## LICENSEE CONTACT FOR THIS LER (12)

NAME

Ms. Brenda W. O'Rourke, Licensing Engineer

TELEPHONE NUMBER (Include Area Code)

(616) 465-5901, x2604

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE<br>TO EPIX | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE<br>TO EPIX |
|-------|--------|-----------|--------------|-----------------------|-------|--------|-----------|--------------|-----------------------|
|       |        |           |              |                       |       |        |           |              |                       |
|       |        |           |              |                       |       |        |           |              |                       |

## SUPPLEMENTAL REPORT EXPECTED (14)

|   |                             |                                     |       |     |      |
|---|-----------------------------|-------------------------------------|-------|-----|------|
| <input checked="" type="checkbox"/> YES<br>(If Yes, complete EXPECTED SUBMISSION DATE). | <input type="checkbox"/> NO | EXPECTED<br>SUBMISSION<br>DATE (15) | MONTH | DAY | YEAR |
|   |                             |                                     | 07    | 30  | 1999 |

Abstract (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On January 7, 1999, Engineering identified that TS surveillance procedure 12 EHP 4030 STP.229, "Control Room Emergency Ventilation Test," did not test the control room pressurization system in normal operating control room pressure boundary configuration. Control room pressure boundary door 12DR-AUX415, which is common to both the Unit 1 and 2 control room pressure boundaries and normally open during plant operation, was closed for performance of the test. TS 4.7.5.1.e.3 is intended to verify that the pressurization system will maintain a positive control room pressure during a postulated accident to prevent radioactive material and/or contamination from entering the control room. However, since the test was conducted with door 415 closed, which is not the plant condition expected to exist in the event of a postulated accident, verification of the systems' ability to perform its intended safety function was not accomplished.

Preliminary investigation indicated that failure to recognize door 415 as part of the control room pressure boundary design basis resulted in the door being maintained open since plant start-up. The safety consequences resulting from the door remaining open during a postulated accident could potentially result in control room operator doses in excess of 10 CFR 50 Appendix A, General Design Criteria 19 limits. On January 25, 1999, door 415 was placed in the closed position. Administrative controls have been established to ensure the door remains closed, except during ingress and egress by plant personnel. A walkdown of other doors that separate the Unit 1 and 2 control room pressure boundaries was performed which verified that the doors were closed.

The root cause investigation for this event has not been completed. Additional corrective actions, including preventive actions, may be developed based on the results of the investigation. Based on the results, supplemental information, including additional corrective and preventive actions, will be provided in an update to this LER by July 30, 1999.

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LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET NUMBER(2) | LER NUMBER (6) |                   |     |                 | PAGE (3) |
|-------------------|------------------|----------------|-------------------|-----|-----------------|----------|
|                   |                  | YEAR           | SEQUENTIAL NUMBER |     | REVISION NUMBER |          |
|                   |                  | 1999           | --                | 003 | -- 00           |          |

Cook Nuclear Plant Unit 1

05000-315

2 of 4

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

**Conditions Prior to Event**

Unit 1 was in Mode 5, Cold Shutdown, depressurized  
Unit 2 was in Mode 5, Cold Shutdown, depressurized

**Description of Event**

On January 7, 1999, Engineering identified that Technical Specification (TS) surveillance procedure 12 EHP 4030 STP.229, "Control Room Emergency Ventilation Test," did not test the control room pressurization system in normal operating control room pressure boundary configuration. An Engineering review determined that control room pressure boundary door 12DR-AUX 415, which is common to both the Unit 1 and Unit 2 control rooms and normally in the open position during operation, was closed prior to performance of the TS surveillance test. In addition, no automatic closure signals exist that would cause the door to close in the event of a control room pressurization system actuation. Door 12DR-AUX415 is equipped with an electrical release mechanism, which automatically signals the door to close in the event of a fire. Also, a review of current operating procedures identified that no instruction exists which would instruct the operators to manually close the door during a postulated accident. A review of the design basis for the control room pressure boundary identified door 12DR-AUX415 as part of the pressure boundary for both Unit 1 and Unit 2 control rooms. However, a preliminary investigation has concluded that the door had been maintained in the open position since initial plant start-up.

Technical Specification surveillance requirement 4.7.5.1.e.3 is intended to verify that the control room pressurization system will maintain a positive control room pressure greater than or equal to 1/16 inch water gage relative to the outside atmosphere at a pressurization system flow rate of 6000 cubic feet per minute. However, since the surveillance test was conducted with the control room pressure boundary door closed, which is not the plant condition expected to exist in the event of a postulated accident, verification of the systems' ability to perform its intended safety function was not accomplished.

This condition was previously identified during a self-assessment of the control room and fuel handling area ventilation system conducted in 1991. Based on the results of the inspection, steps were incorporated into the appropriate Emergency Operating Procedures (EOPs) to ensure that door 12DR-AUX415 would be manually closed when the control room pressurization system was required. A subsequent revision to the EOPs in 1996 inadvertently resulted in these steps being deleted from the procedures.

**Cause of Event**

Preliminary investigation indicated that failure to recognize door 12DR-AUX415 as part of the control room pressure boundary design basis resulted in the door being maintained open since initial plant start-up, and following identification of this condition in 1991.

Contributing factors included inadequate procedure revision process. The basis for the changes made to the EOPs, including the justification for the door to remain closed, was not adequately documented in the procedure change sheets. Also, the appropriate source documents were not referenced in the procedures.

**Analysis of Event**

This LER is submitted in accordance with 10CFR50.73(a)(2)(i)(B) for a condition prohibited by plant Technical Specifications, since the control room pressurization systems' safety function was not verified as required by TS

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET NUMBER(2) | LER NUMBER (6) |                   |     |                 | PAGE (3) |
|-------------------|------------------|----------------|-------------------|-----|-----------------|----------|
|                   |                  | YEAR           | SEQUENTIAL NUMBER |     | REVISION NUMBER |          |
|                   |                  | 1999           | --                | 003 | --              | 00       |

Cook Nuclear Plant Unit 1

05000-315

3 of 4

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

## Analysis of Event (cont.)

surveillance requirement 4.7.5.1.e.3. In addition, operation of the plant with door 12DR-AUX415 in the open position resulted in the plant being outside its design basis, which is reportable under 10CFR50.73(a)(2)(ii)(B).

The Unit 1 and Unit 2 control rooms are located adjacent to each other. The control rooms are accessed through common security doors but are divided into separate, independent control room pressure boundaries. The Unit 1 control room pressure boundary consists of the control room, plant computer room, an equipment room, and kitchen. The Unit 2 control room pressure boundary consists of the control room, plant computer room, an equipment room, and the toilet facilities. Three doors are common to both pressure boundaries; door 12DR-AUX437, which separates the Unit 1 and Unit 2 equipment rooms, door 12DR-AUX492, which separates the Unit 1 and 2 plant computer rooms, and door 12DR-AUX415, which separates the Unit 1 and 2 control room pressure boundaries. Each control room has its own independent control room ventilation system. During normal operating conditions, each control room ventilation system is designed to prevent the entry of dust and dirt into the control room. In the event of a safety injection (SI) signal or a high radiation signal, each ventilation system automatically realigns to pressurize its control room to a positive 1/16 inch water gage pressure, with respect to outside atmosphere, to prevent radioactive gases and/or contamination released during a postulated accident from entering the control room pressure boundary.

Preliminary investigation indicated that with both units in Mode 1 through 4, if a Loss of Coolant Accident (LOCA) occurred in one unit, the SI signal would initiate the control room ventilation systems in both units. During this operating scenario, both the Unit 1 and Unit 2 control room pressure boundaries would be pressurized. As a result, the dose consequences of having door 12DR-AUX415 open would be minimal, since the pressurization of either control room would not be compromised.

With a single unit in Mode 1 through 4, and the other unit's control room ventilation system inoperable, the open position of door 12DR-AUX415 could challenge the ability of the ventilation system to maintain a positive control room pressure of 1/16 inch water gage during a LOCA. This condition is also true for events other than a LOCA (e.g., fuel handling accident, waste gas tank rupture) which could occur during any mode of operation. As a result, radioactive gases and/or contamination released during a postulated event could potentially result in control room operator doses greater than 10 CFR 50 Appendix A, General Design Criteria 19 limits.

At the time this condition was identified, both Unit 1 and Unit 2 were in Mode 5 and neither control room pressurization system had been called upon to perform its safety function. Therefore, no dose consequences existed.

Corrective Actions

As an interim action, on January 25, 1999, door 12DR-AUX415 was placed in the closed position. Administrative controls were established to ensure the door remains in the closed position, except during periods of ingress and egress by plant personnel. A Control Room Habitability analysis for non-SI initiating events is currently in progress. Based on the results of this analysis, it will be determined if door 12DR-AUX415 must remain closed or if it can be procedurally controlled in the open position.

On February 17, 1999, a walkdown of those doors which serve as pressure boundaries between the Unit 1 and Unit 2 control rooms was performed to verify that the doors were appropriately labeled and in the closed position. All doors were found in the closed position. However, doors 12DR-AUX437 and 12DR-AUX492, which are normally closed fire doors, were not labeled as part of the control room pressure boundary. In addition, it was also identified that door 12DR-436AUX, which is a normally closed fire door and located between the Unit 1 control room and the turbine building, was not labeled as a pressure boundary door. An action request has been initiated to provide permanent labels for these doors.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET NUMBER(2) | LER NUMBER (6) |                   |     |                 | PAGE (3) |
|-------------------|------------------|----------------|-------------------|-----|-----------------|----------|
|                   |                  | YEAR           | SEQUENTIAL NUMBER |     | REVISION NUMBER |          |
|                   |                  | 1999           | --                | 003 | --              | 00       |

Cook Nuclear Plant Unit 1

05000-315

4 of 4

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

## Corrective Actions (cont.)

As an enhancement to the procedure revision process, PMP 2010.PRC.001, "Procedure Writing," effective February 1, 1999, was developed to provide instruction for revising plant procedures. The procedure requires that source documents (e.g., commitments, inspection report findings, condition reports) be referenced within the body of the procedure to ensure the source documents used to support changes being made to the procedure are maintained.

An EOP procedure writer's guide is currently being developed which will require referencing all source documents used during the revision process and a history of all changes made to the particular EOP.

The appropriate documents will be revised to include doors 12DR-AUX415, 12DR-AUX437, and 12DR-AUX492 as part of the control room pressure boundary. Also, as part of the EOP upgrade project, a review of past changes made to the procedures, including the bases for the changes will be completed to ensure the revision history is maintained.

The Updated Final Safety Analysis Report and the Control Room Ventilation System Design Basis Document will be revised to clearly reflect that the affected doors are part of the control room pressure boundary design basis and to better describe the Unit 1 and Unit 2 control room pressure envelopes.

The root cause investigation for this event has not been completed. Additional corrective actions, including preventive actions, may be developed based on the results of the root cause investigation. Also, the control room habitability analysis is currently in progress. Based on the results of these analyses, additional corrective, including preventive actions may be developed. It is anticipated that, if significant changes are identified, supplemental information regarding corrective and preventive actions will be provided in an update to this LER by July 30, 1999.

Previous Similar Events

None.

