

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 (7-6 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.

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| FACILITY NAME (1) SURRY POWER STATION, Unit 1 | | DOCKET NUMBER (2) 05000 - 280 | PAGE (3) 1 OF 5 |
|---|--|---|---------------------------|

TITLE (4)
EQ Unanalyzed Condition/Outside App. R Design Basis Due to Unlatched Doors

| 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 NAME | DOCUMENT NUMBER |
| 10 | 28 | 97 | 97 | -- 012 -- | 00 | 11 | 26 | 97 | Surry Power Station, Unit 2 | 05000-281 |
| | | | | | | | | | FACILITY NAME | DOCUMENT NUMBER |
| | | | | | | | | | | 05000- |

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|--------------------------------|----------------------------------|---|-------------|--|-------------------|------------------|--|------------------|--|--|--|
| OPERATING MODE (9) N | POWER LEVEL (10) 100 % | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11) | | | | | | | | | |
| | | 20.2201(b) | | | 20.2203(a)(2)(v) | | | 50.73(a)(2)(i) | | | 50.73(a)(2)(viii) |
| | | 20.2203(a)(1) | | | 20.2203(a)(3)(i) | | | 50.73(a)(2)(ii) | | | 50.73(a)(2)(x) |
| | | 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 or in NRC Form 366A |
| 20.2203(a)(2)(iv) | | | 50.36(c)(2) | | | 50.73(a)(2)(vii) | | | | | |

LICENSEE CONTACT FOR THIS LER (12)

| | |
|---|---|
| NAME D. A. Christian, Station Manager | TELEPHONE NUMBER (Include Area Code) (757) 365-2000 |
|---|---|

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 |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
| NA | NA | NA | NA | NA | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14)

| | | | | | | |
|--|---|----|--------------------------|-------|-----|------|
| YES (If yes, complete EXPECTED SUBMISSION DATE) | X | NO | EXPECTED SUBMISSION DATE | MONTH | DAY | YEAR |
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On October 27, 1997, the tripping of two breakers in a security distribution panel resulted in a loss of power to security systems, as well as a loss of power to the latching mechanism on several doors, which caused the doors to become unlatched. The affected doors have security, environmental qualification (EQ), and/or fire protection functions. At the time of occurrence, Unit 1 was at 100% power and Unit 2 was at intermediate shutdown in the process of starting up following completion of a scheduled refueling outage. Compensatory measures were implemented, as required, including security provisions. It was determined that having multiple EQ doors in an unlatched condition simultaneously resulted in an unanalyzed condition; the unanalyzed condition resulted because the defined allowed outage times for the EQ doors assume no simultaneous EQ door breaches. It was also concluded that fire doors being unlatched resulted in being outside the 10CFR50 Appendix R design basis because the unlatched doors may not have prevented the spread of a fire from one fire area to other fire areas. A design change to revise the power failure mode on the affected doors from energized-to-latch to energized-to-unlatch has been implemented. This report is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(ii)(A) [unanalyzed condition] and 10CFR50.73(a)(2)(ii)(B) [outside design basis].

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| | | YEAR 97 | SEQUENTIAL NUMBER -012-- | REVISION NUMBER 00 | |

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

1.0 DESCRIPTION OF THE EVENT

On October 27, 1997 at 1625 hours, with Unit 1 at 100% power and Unit 2 at intermediate shutdown in the process of starting up following completion of a scheduled refueling outage, a loss of power occurred to security systems due to a circuit breaker tripping. Compensatory measures were implemented within ten minutes to address the loss of the security systems. Specifically, the compensatory measures were for the loss of protected and vital area alarms, loss of closed circuit television, loss of radio communications, and loss of electronic control access.

Subsequently, the door between the Turbine Building and the Emergency Switchgear Room (2-BS-DR-21) was found unlatched; this door is a non-vital security controlled door, an environmental qualification (EQ) door, and a fire door. Shortly thereafter, a second door - the door between the Emergency Switchgear Room and the back stairway to the Main Control Room (2-BS-DR-20) - was also found unlatched; this door is a non-vital security controlled door and a fire door. As a result of these doors being found unlatched, other doors were checked. It was discovered that the following doors were also unlatched:

- Between Emergency Diesel Generator Rooms and Turbine Building (1-BS-DR-1, 2-BS-DR-2, 1-BS-DR-3) - non-vital security controlled, EQ, and fire doors
- Between Unit 2 Switchgear Room and Stairway to Control Room (2-BS-DR-45) - non-vital security controlled and fire door
- Between Unit 2 Cable Spreading Room and Turbine Building (2-BS-DR-49) - non-vital security controlled and fire door

The identified doors becoming unlatched was the result of a second circuit breaker tripping. In the unlatched condition, the fire doors were considered inoperable and, as required by Technical Specifications, posting of fire watches for the affected fire doors was initiated. While in the process of posting the required fire watches, the fire doors identified above were verified to be latching properly, after power was restored by resetting the breakers. Therefore, the fire watches were secured. At that time, it was suspected that the loss of power to the security systems resulted in the doors becoming unlatched.

In parallel with the actions taken from the security and fire protection perspectives, it was determined that an EQ watch was not necessary since a watch would serve no purpose because the doors would not perform their EQ function in an unlatched condition. However, an assessment of the unlatched doors on EQ was subsequently initiated. On October 28, 1997, it was determined that having multiple EQ doors in an unlatched condition simultaneously resulted in an unanalyzed condition; the unanalyzed condition resulted because the defined allowed outage times for the EQ doors assume no

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1.0 DESCRIPTION OF THE EVENT (continued)

simultaneous EQ door breaches. A non-emergency one hour report to the NRC was completed at 1825 hours on October 28, 1997 in accordance with 10CFR50.72(b)(1)(ii)(A).

Additional walkdowns and testing were performed by Engineering and Security personnel to verify the power failure mode of the fire door latches. As the energized-to-latch configuration (i.e., unlatch on loss of power) was identified, fire watches were again posted. Upon further review, it was subsequently determined that fire doors in an unlatched condition due to the loss of power resulted in being outside the 10CFR50 Appendix R design basis. This conclusion was reached because the doors in an unlatched position may not have provided their assumed fire rating and, therefore, may not have prevented the spread of a fire from one fire area to other fire areas.

This report is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(ii)(A) for being in an unanalyzed condition due to multiple EQ doors in an unlatched condition simultaneously, as well as pursuant to the requirements of 10CFR50.73(a)(2)(ii)(B) for being outside the 10CFR50 Appendix R design basis due to fire doors being in an unlatched condition as a result of a loss of power.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

The loss of power to the door latching mechanisms existed for a short duration (i.e., approximately 90 minutes). During this short period of time, the unlatched doors would not have performed their EQ function; similarly, the unlatched doors may not have provided their assumed fire rating and, therefore, may not have prevented the spread of a fire from one fire area to other fire areas. However, a condition requiring the doors to perform their EQ or fire protection function did not occur. Therefore, this incident did not result in a condition adverse to nuclear safety, and the health and safety of the public were not affected.

3.0 CAUSE OF THE EVENT

The loss of power to the security systems was the result of the tripping of one of the breakers in a security distribution panel in the Central Alarm Station (CAS). The identified doors becoming unlatched was the result of the tripping of a second breaker in the same CAS panel. Interviews with Security and Operations personnel revealed that the breakers tripped near the completion of the monthly periodic test (PT) being performed on the security diesel generator. The breaker trips are believed to have occurred when the alternate AC input to the inverter transferred from the diesel generator

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3.0 CAUSE OF THE EVENT(continued)

to the normal power source. Engineering has evaluated the breaker trips. It is recognized that the capacity of the breaker that resulted in the loss of power to the security systems needs to be increased. The second breaker affecting the doors is believed to be near its design loading.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

Upon the loss of power to the security systems, the Security staff implemented compensatory measures within ten minutes. Specifically, the compensatory measures were for the loss of protected and vital area alarms, loss of closed circuit television, loss of radio communications, and loss of electronic control access. These compensatory measures remained in place until power was restored and testing was performed by Security to verify the operability of the security systems.

Upon recognition of fire doors being in the unlatched condition and, therefore, considered inoperable, posting of fire watches for the affected fire doors was initiated, as required by Technical Specifications. While in the process of posting the required fire watches, the fire doors identified above were verified to be latching properly. Therefore, the fire watches were secured.

The breakers in the affected CAS panel were reset, restoring power to the security systems and to the affected doors.

An assessment of the unlatched doors on EQ was initiated when it was determined that an EQ watch was not necessary since a watch would serve no purpose because the doors would not perform their EQ function in an unlatched condition.

5.0 ADDITIONAL CORRECTIVE ACTIONS

On October, 28, 1997, the EQ assessment was completed, and it was concluded that having multiple EQ doors in an unlatched condition simultaneously resulted in an unanalyzed condition; the unanalyzed condition resulted because the defined allowed outage times for the EQ doors assume no simultaneous EQ door breaches. A non-emergency one-hour report to the NRC was completed at 1825 hours on October 28, 1997 in accordance with 10CFR50.72(b)(1)(ii)(A).

Additional walkdowns and testing were performed by Engineering and Security personnel to verify the power failure mode of the fire door latches. As the energized-to-latch configuration (i.e., unlatch on loss of power) was identified, fire watches were again posted; these fire watches remained in place until modifications were performed. Upon

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5.0 ADDITIONAL CORRECTIVE ACTIONS (continued)

further review, it was determined that fire doors in an unlatched condition due to the loss of power resulted in being outside the 10CFR50 Appendix R design basis; this conclusion was reached because the doors in an unlatched position may not have provided their assumed fire rating and, therefore, may not have prevented the spread of a fire from one fire area to other fire areas.

On November 7, 1997, another PT was performed on the security diesel generator. This PT differs from the monthly PT performed on October 27, 1997 in the way it is initiated (i.e., feeder breaker being opened versus security diesel generator transfer switch placed in test position). Therefore, the PT performed on November 7, 1997 closely resembles a loss of power event that would require operation of the security diesel generator. The November 7, 1997 PT was performed successfully with no breakers tripping. In addition, the scheduled monthly PT was performed satisfactorily with no breakers tripping on November 24, 1997.

6.0 ACTIONS TO PREVENT RECURRENCE

A design change package (DCP) was initiated to change the power failure mode for the affected doors from energized-to-latch to energized-to-unlatch. This change in failure mode eliminates the impact of the breaker tripping incident on the Surry Appendix R and EQ Programs because the door latches now lock upon a loss of power, thereby ensuring that the functional requirements for the doors will be met. This DCP has been completed on the affected doors with respect to the non-vital security controlled, EQ, and fire protection functional requirements.

Both breakers that tripped will be replaced.

7.0 SIMILAR EVENTS

None.

8.0 MANUFACTURER/MODEL NUMBER

Not applicable.

9.0 ADDITIONAL INFORMATION

None.