

**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: 60.0 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-E 722), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545-0001, AND TO THE PAPERWORK REDUCTION PROJECT (5160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  
Clinton Power Station

DOCKET NUMBER (2)  
05000461

PAGE (3)  
1 OF 4

(TITLE (4))  
Failure of ABB to Supply Properly Qualified Components Results in Inoperability of All In-Service Thirty-Three 480-Volt K-Line Safety-Related Circuit Breakers

| EVENT DATE (5) |     |      | LER NUMBER (6) |                   | REPORT DATE (7) |       |     | OTHER FACILITIES INVOLVED (8) |               |
|----------------|-----|------|----------------|-------------------|-----------------|-------|-----|-------------------------------|---------------|
| MONTH          | DAY | YEAR | YEAR           | MO/INITIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR                          | FACILITY NAME |
| 11             | 26  | 97   | 97             | 02A               | 00              | 12    | 23  | 07                            | None          |
|                |     |      |                |                   |                 |       |     | DOCKET NUMBER<br>05000        |               |
|                |     |      |                |                   |                 |       |     | DOCKET NUMBER<br>05000        |               |

OPERATING MODE (9) 4  
POWER LEVEL (10) 000  
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 1: (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)(8)(i) 50.73(a)(2)(ii) 50.73(a)(2)(x)  
20.2203(a)(2)(ii) 20.2203(a)(3)(iii) 50.73(a)(2)(iii) 72.71  
20.2203(a)(2)(iii) 20.2203(a)(4) 50.73(a)(2)(iv) X OTHER  
20.2203(a)(2)(iii) 50.36(d)(1) 50.73(a)(2)(v) Specify in Abstract below  
20.2203(a)(2)(iv) 50.36(e)(2) X 50.95(a)(5)(vii) or in NRC Form 365A

NAME (12) LICENSEE CONTACT FOR THIS LER (12) Mark Wagner, Engineer, Nuclear Station Engineering Department  
TELEPHONE NUMBER (Include Area Code) (217) 835-8881, Extension 4071

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NFRDS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NFRDS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
|       |        |           |              |                     |       |        |           |              |                     |

SUPPLEMENTAL REPORT EXPECTED (14)  
YES (If yes, complete EXPECTED SUBMISSION DATE) X NO  
EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)  
On November 26, 1997, the plant was in Mode 4 (Cold Shutdown) for the sixth refueling outage (KF-6). Engineering identified that the environmental qualification of the power shield trip units associated with all thirty-three inservice ABR 480-volt K-Line safety-related circuit breakers were not sufficient to withstand the expected dose rates following a worst case loss of coolant accident. The cause of this event is that ABB can no longer assure Illinois Power that the power shield trip units associated with ABB-480-volt K-Line safety-related circuit breakers are qualified for the expected post loss of coolant accident radiation dose. Also, Illinois Power was not notified by ABB when they made the 10 CFR Part 21 notification of this condition. The corrective action for this event includes, either replace or repair the affected components in the inservice ABB 480-volt K-Line safety related circuit breakers with properly qualified components or evaluate that the installed power shield trip units on ABB 480-volt K-Line safety-related circuit breakers are acceptable for the expected environmental conditions, obtain and review a list of 10 CFR Part 21 notifications for ABB circuit breakers and relays to determine if Illinois Power was notified of applicable 10 CFR Part 21 notifications.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

|                       |          |                |                   |                 |          |
|-----------------------|----------|----------------|-------------------|-----------------|----------|
| FACILITY NAME (1)     | DOCKET   | LER NUMBER (8) |                   |                 | PAGE (3) |
|                       |          | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |
| Clinton Power Station | 05000481 | 97             | 028               | 00              | 2 OF 4   |

TEXT (If more space is required, use additional copies of NRC Form 365A) (17)

DESCRIPTION OF EVENT

On November 26, 1997, the plant was in Mode 4 (Cold Shutdown) for the sixth refueling outage (RF-6), reactor (RCT) coolant temperature was being maintained within a band of 100 to 120 degrees Fahrenheit and pressure was atmospheric. Engineers were reviewing information such as technical bulletins and 10 CFR Part 21 notifications that they had requested from ABB to determine applicability to the ABB 480-volt K-Line circuit breakers (52) installed at Clinton Power Station (CPS). This review was being conducted to ensure that ABB vendor information had been properly addressed at the station. Included in this review was a 10 CFR Part 21 report issued by ABB on July 28, 1994. The July 28, 1994, 10 CFR Part 21 listed several products supplied by ABB to nuclear power plants. These products were not qualified to sustain the radiation levels previously described in the qualification reports supplied to the purchasers by ABB. Review of this notification and discussions with ABB revealed that the power shield trip unit, used on thirty-three inservice ABB 480-volt K-Line safety-related circuit breakers at Clinton Power Station, were affected by this notification. Illinois Power was not included in the attachment to the 10 CFR Part 21 notification that listed the affected utilities and did not receive the notification.

The qualification reports provided for the power shield trip units documented that they were environmentally qualified to 1.0 E5 Rads, Gamma, total dose. The 10 CFR Part 21 notification states that the power shield trip units are actually only qualified to receive 1.0 E3 Rads, Gamma, total dose. The power shield trip units, used in all safety-related ABB 480-volt K-Line circuit breakers, are required to be environmentally qualified to receive 1.0 E5 to 1.0 E4 Rads, Gamma, total dose. These radiation dose values are associated with the radiation dose received by the component following a postulated worst case loss of coolant accident. A calculation was performed to determine what the radiation dose the power shield trip units would be subjected to under the most severe accident during the current operating mode (Mode 4). The results of the calculation disclosed that the power shield trip unit radiation dose would not exceed the 1.0 E3 Rads, Gamma, total dose qualification of the installed power shield trip units. Therefore, these devices are operable while the plant is shutdown.

No automatic or manually initiated safety system responses were necessary to place the plant in a safe and stable condition. This event was not affected by other inoperable equipment or components.

CAUSE OF THIS EVENT

ABB can no longer provide assurance that the power shield trip units supplied by ABB with their 480-volt K-Line safety-related circuit breakers meet the radiation dose requirements specified in the purchase specification for these components.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

| FACILITY NAME (1)     | DOCKET   | LER NUMBER (2) |                   |                 | PAGE (3) |
|-----------------------|----------|----------------|-------------------|-----------------|----------|
|                       |          | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |
| Clinton Power Station | 05000461 | 87             | 030               | 00              | 4 OF 4   |

TEXT (If more space is required, use additional copies of NRC Form 388A) 7)

Illinois Power is providing the following information in accordance with 10 CFR Part 21.21(c)(4). Initial notification of this matter will be provided by facsimile of this letter to the NRC Operations Center in accordance with 10 CFR Part 21.21(c)(3) within 2 days of the date the responsible officer approves this report.

- (i) John G. Cook, Senior Vice President of Illinois Power Company, Clinton Power Station, Highway 54, 6 miles East, Clinton, Illinois, 61727, is informing the NRC of a condition reportable under the provisions of 10 CFR Part 21 by means of this report.
- (ii) The basic component involved in this report is the qualification of the power shield trip units associated with ABB 480-volt K-Line safety-related circuit breakers.
- (iii) The power shield trip units associated with ABB 480-volt K-Line safety-related circuit breakers were supplied by ABB.
- (iv) As discussed in the DESCRIPTION OF EVENT portion of this report the nature of the condition is the failure to notify Illinois Power of the problem with the qualification of the power shield trip units associated with ABB 480-volt K-Line safety-related circuit breakers.  
  
As discussed in the ANALYSIS OF EVENT portion of this report, failure of the power shield trip units associated with ABB 480-volt K-Line safety-related circuit breakers could cause the circuit breakers to not properly perform their safety function.
- (v) On November 26, 1997, Illinois Power identified that they were not notified of the problem with qualification of the power shield trip units associated with ABB 480-volt K-Line safety-related circuit breakers and Illinois Power determined that this issue was potentially reportable under 10 CFR Part 21.
- (vi) This issue affects the power shield trip units associated with ABB 480-volt K-Line safety-related circuit breakers. Illinois Power is aware that a 10 CFR Part 21 notification was made by ABB to the NRC on July 28, 1994, on this issue. However Illinois Power was not notified by ABB of this issue.
- (vii) The corrective action that Illinois Power is taking for this event is discussed in the CORRECTIVE ACTION portion of this report.
- (viii) Illinois Power has no additional information to offer.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

| FACILITY NAME (1)     | EVENT    | LER NUMBER (6) |                   |                 | PAGE (3) |
|-----------------------|----------|----------------|-------------------|-----------------|----------|
|                       |          | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |
| Clinton Power Station | 06000461 | 97             | 030               | 00              | 3 OF 4   |

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

## CORRECTIVE ACTION

Illinois Power will either replace or repair the affected power shield trip units in the inservice ABB 480-volt K-Line safety-related circuit breakers to obtain properly qualified power shield trip units or evaluate that the currently installed power shield trip units on safety-related 480-volt K-Line circuit breakers are acceptable for the expected environmental conditions. Operations entered a Mode restraint to not enter Mode 2 (Startup) until this issue is resolved. Also, Illinois Power will obtain and review a list of 10 CFR Part 21 notifications for circuit breakers and relays from ABB to determine if Illinois Power was notified of other applicable 10 CFR Part 21 notifications.

## ANALYSIS OF EVENT

This event is reportable under the provisions of 10CFR50.73 (a)(2)(vii) as a condition where a single cause or condition could have caused two independent trains to become inoperable in a single system designed to remove residual heat, mitigate the consequences of an accident, or shut down the reactor and maintain it in a safe shutdown condition.

This event is potentially nuclear safety significant. The affected components are installed on all inservice ABB 480-volt K-Line safety-related circuit breakers at CPS. In the event of an accident the power shield trip units could fail due to excessive radiation exposure. This could prohibit 480-volt supplied equipment from operating or tripping when required.

The power shield trip units for the ABB 480-volt K-Line safety-related circuit breakers have not been qualified since the equipment was initially put into service during plant construction.

## ADDITIONAL INFORMATION

No equipment or components failed during this event.

Illinois Power has not reported in recent history an event involving circuit breaker components or relays being installed without proper environmental qualification.

For further information on this event contact Mark Wagner, Engineer, Nuclear Station Engineering Department, at (217) 935-8881, extension 4071.

10CFR Part 21 Report 21-97-056

On November 26, 1997, Illinois Power determined that ABB failed to notify Illinois Power of a problem with the qualification of power shield trip units supplied with ABB 480-volt K-Line circuit breakers. This issue was determined to be potentially reportable under 10 CFR Part 21. Illinois Power has completed evaluation of this issue and concludes that it is reportable under the provisions of 10 CFR Part 21.