

ILLINOIS POWER COMPANY



CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

March 17, 1986

Docket No. 50-461

Director of Nuclear Reactor Regulation
Attention: Dr. W. R. Butler, Director
BWR Project Directorate No. 4
Division of BWR Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Clinton Power Station
Electrical Circuits Inspection

Dear Dr. Butler:

On October 29-30, 1985, J. Lazevnick of the Electrical, Instrumentation and Controls Branch conducted an on-site inspection of electrical circuits and a drawing review. The purpose of the site visit included the review of minimum separation distance for electrical circuits. Mr. Lazevnick's findings during the inspection and Illinois Power's response are attached.

Please contact me if additional information is needed.

Sincerely yours,

A handwritten signature in dark ink, appearing to read 'F. A. Spangenberg'.

F. A. Spangenberg
Manager - Licensing and Safety

PJT/ckc

Attachments

cc: B. L. Siegel, NRC Clinton Licensing Project Manager
NRC Resident Office
Regional Administrator, Region III, USNRC
Illinois Department of Nuclear Safety

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RESOLUTION OF NRC STAFF FINDINGS
DURING THE CLINTON POWER STATION SITE VISIT

J. Lazevnick (NRC/Electrical, Instrumentation and Controls Branch) inspected electrical circuits during his site visit at Clinton Power Station on October 29-30, 1985. The following are J. Lazevnick's findings and the Illinois Power Company (IP) response.

1. NRC Staff Comment. In the weeks prior to the site visit, the Staff had been reviewing new minimum separation distances proposed by the applicant for the electrical circuits at Clinton Power Station (CPS) as well as the analysis and test results that supported those new separation distances. During the site visit, a number of areas were seen where the new minimum separation criteria will be needed to avoid re-working the circuits. These consisted primarily of conduit-to-conduit and conduit-to-tray crossings between safety and nonsafety, and redundant safety circuits. No cases were seen where free air cables came in contact with redundant conduits. The majority of circuits in the plant appeared to meet the original separation criteria although permanent tray covers were not yet installed in areas which will require them. The covers are scheduled for installation at a later date. The staff plans to approve the applicant's new separation criteria. This item will be addressed in a supplement to the Clinton SER.

IP Response. The NRC CPS Project Manager, B. L. Siegel has stated that this item has been resolved and will be included in Supplement No. 6 to the Safety Evaluation Report (SSER 6).

2. NRC Staff Comment. The power cable routes for two redundant RHR pumps were traced from the switchgear to the pump installations. It was demonstrated that the required minimum separation distances were maintained between these circuits, and their routes were as specified on the cabling routing documentation.

IP Response. None required.

3. NRC Staff Comment. The power supplies to the RPS A&B SCRAM solenoid valves were reviewed. The power supply consists of an inverter and its associated power monitor. The inverter is fed from a nonsafety battery. The staff questioned the applicant regarding the qualification of the inverter and its power monitor. The applicant produced a parts list which indicated they both were qualified Class 1E, however it was not clear whether they were included as qualified Class 1E devices in the CPS quality assurance program. This is necessary to ensure the devices retain their qualification attributes over the life of the plant. Region III will follow-up on this item.

The staff also questioned the applicant about the electrical and physical independence between the inverter and its power monitor. Independence is necessary to ensure there are no common single failure modes that could cause the output of the power supply to go to a condition (overvoltage, undervoltage, underfrequency) which could fail the SCRAM solenoid valves in a non-safe condition. The power monitor and the inverter are located in the same cabinet but the exact location of the power monitor circuits could not be determined because detailed drawings were not available. The applicant is looking into this matter and will provide additional information at a later date.

IP Response.

A. Qualification of the RPS Power Supplies

The Class 1E qualification of the Reactor Protection System (RPS) power supply, which consists of an inverter and its associated power monitor, is maintained by the following programs:

- a) Item VII in FSAR Table 3.2-1, "Classification of Systems, Components and Structures," classifies the RPS power supplies (1C71-S004A & 4B) as Class 1E.
- b) The Nuclear Station Engineering Department (NSED) procedure M.1, "Classification of Maintenance Work Requests," provides direction on classifying Maintenance Work Requests (MWRs) based on the FSAR.
- c) CPS Procedure 1029.01, "Preparation and Routing of MWRs," requires NSED to classify MWRs until the CPS Master Equipment List has been verified and approved.
- d) CPS Procedure 1034.01, "Preventive Maintenance," requires the Plant Maintenance Department to write a MWR whenever performing a preventive maintenance requiring the use of tools.

The procedures are in place to ensure that the Reactor Protection System Uninterruptible Power Supply (UPS) devices retain their Class 1E qualification over the life of the plant.

This issue was identified by Mr. R. Love, NRC Region III, as open item number 85-54-03. Mr. Love has reviewed IP's response to this issue and recommended it for closure in Inspection Report #86-14.

B. Independence Between Inverter and Power Monitor

The independence between the inverter and the power monitor of the RPS UPS is demonstrated by the analysis performed by General Electric in Attachment 1. The results of the analysis conclude that the electrical and functional independence between the inverter and the power monitor complies with the Illinois Power position in the CPS Safety Evaluation Report (SER) 8.3.1, page 8-11.

4. NRC Staff Comment. During the walk through of the battery rooms, the seismic qualification of the lighting installation and eyewash piping in the division III battery room was questioned. The applicant provided a drawing which indicated that the lighting was seismically installed. The eyewash piping, however, was not seismically installed. The applicant stated that the non-seismic qualification of the piping had been reviewed and was concluded not to be a safety concern. He will provide the staff with this justification at a later date.

IP Response. Illinois Power has evaluated the seismic qualification of the eyewash station and its associated piping and has determined that the eyewash station and piping was not adequately supported at the time of inspection. Plant Construction Work Request (PCWR) 900210 was initiated to replace four 1/4-inch diameter wedge type expansion anchors with four 3/8-inch diameter toggle bolts. Subsequently, due to the wall design, 3/8-inch diameter "thru bolts" were used as approved by Field Change Request (FCR) 46755. FCR 46755 was closed January 31, 1986. PCWR 900210 was completed February 1, 1986. Sargent & Lundy's Calculations SD-Q10-94DG05, Revision 4, and SD-Q10-22DG09, Revision 3, confirm that the repaired condition will provide adequate structural support for the eyewash station and piping during a postulated seismic event.

5. NRC Staff Comment. The as-built schematics listed in the agenda were reviewed with the applicant. In addition, the staff discussed with the applicant his design for separating the diesel generator from the offsite power circuit when there is a loss of offsite power during a load test when the diesel generator is in parallel with offsite power. Verifying that these circuits do not lockout the diesel generator for this condition was originally Region III open item number 85-05-14. The staff will address this item in a supplement to the CPS SER.

IP Response. B. L. Siegel has stated that this item has been resolved and will be closed out in SSER 6.