SEP 8 1981

No. IRS 54

RESTRICTED
DIFFUSION RESTREINTE

Date of Receipt
Date de Réception 25th August 1981

Name of nuclear power station Nom de la centrale	Palisades (USA)
Date of incident Date de l'incident	6th January 1981
Type of reactor Type de réacteur	PWR
Authorized electrical power Niveau de puissance électrique autorisé	740 MWe (net)*
First commercial operation Date de mise en service	December 1971*

* added by NEA Secretariat

Included is the extraction from NUREG-0090 Vol. 4, No. 1, "Report to Congress on Abnormal Occurrences", with the approval of the IRS coordinator in the United States.

81-1 Inadvertent Disconnection of Station Batteries

Preliminary information pertaining to this incident was reported in the Federal Register (Ref. 2). Appendix A (one of the general criteria) of this report notes that major degradation of essential safety-related equipment can be considered an abnormal occurrence.

Date and Place - On January 6, 1981, the NRC was notified by Consumers Power Company that the breakers from both station batteries to their 125-volt DC buses at the Palisades Nuclear Power Plant had been inadvertently opened for about one hour. The Palisades plant utilizes a pressurized water reactor and is located in Van Buren County, Michigan.

Nature and Probable Consequences - On January 6, 1981, while performing monthly surveillance tests on both station batteries, maintenance personnel inadvertently opened the breakers from both station batteries to their 125-volt DC buses and left them open for approximately one hour.

When the event occurred, the plant was operating at 99 percent power. Since the plant was in a normal mode of operation, DC power was being supplied by the AC system via the battery chargers; therefore, DC power was never interrupted during the period the battery breakers were left open. Nevertheless, the safety of the plant was degraded. A loss of offsite power during this period would, in the absence of manual action, result in the loss of all control power, thus blocking the automatic transfer of power to the onsite diesel generators and resulting in a complete station blackout. The station blackout would persist until the battery breakers were manually reclosed or manual actions taken (e.g., manually closing the breakers from the diesel generators to the emergency buses and then additionally closing the load breakers for the required safety systems). During this time the ability of the plant to remove decay heat would be severely restricted. Since the tripping of the battery breakers is not annunciated in the Palisades control room, a subsequent loss of offsite power could lead to an undetected common mode failure.

Such a failure would be difficult to diagnose, thereby limiting the operator's ability to take timely corrective action. Consequently, an inordinate amount of time could be required to bring the plant to a normal mode of decay heat removal.

Cause or Causes - The batteries were disconnected because of the failure of two electricians to follow the surveillance test procedure. The procedure involves placing the two battery chargers, which had been in standby, in service and placing the two operating battery chargers in standby. The electricians incorrectly disconnected the batteries, while connecting the two additional battery chargers. This resulted in an incorrect operating configuration where all four battery chargers were in service supplying the two 125-volt DC buses (two battery chargers connected to each bus) and the batteries were disconnected.

The test procedure was examined by the NRC and found to be adequate. The two electricians who performed the test procedure had a copy of the procedure, had performed the test previously, and had been briefed on the work by their supervisor prior to beginning the test.

REFERENCES

1. U.S. Nuclear Regulatory Commission, "Abnormal Occurrence Reports: Implementation of Section 208, Energy Reorganization Act of 1974; Policy Statement," Federal Register, Vol. 42, No. 37, February 24, 1977, 10950-10952.

2. U.S. Nuclear Regulatory Commission, "Abnormal Occurrence: Inadvertent Disconnection of Station Batteries," Federal Register, Vol. 46, No. 95, May 18, 1981, 27206-27207.

3. "Immediate Action Letter" from James G. Keppler, Director, NRC Region III Office, to R. C. Youngdahl, Executive Vice President, Consumers Power Company, Docket No. 50-255, January 9, 1981.*

4. Letter from James G. Keppler, Director, NRC Region III Office to R. B. Dewitt, Vice President, Nuclear Operations, Consumers Power Company, forwarding a Notice of Violation, Docket No. 50-255, June 12, 1981.*

5. Letter from Victor Stello, Jr., NRC, to R. C. Youngdahl, Executive Vice President, Consumers Power Company, forwarding an "Order Confirming Licensee Actions to Upgrade Facility Performance," Docket No. 50-255, March 9, 1981.*

6. U.S. Nuclear Regulatory Commission, Inspection and Enforcement Information Notice No. 81-05, "Degraded DC System at Palisades," March 13, 1981.*