PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-III-88-86 Date October 18, 1988

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region III staff on this date.

Facility: Commonwealth Edison Company
Braidwood Unit 1
Braceville, IL 60407

Docket No. 50-456

Licensee Emergency Classification:
X Notification of an Unusual Event
Alert
Site Area Emergency
General Emergency
Not Applicable

Subject: LOSS OF OFFSITE POWER

At 8:19 p.m (CDT), October 16, 1988, while operating at 95 percent power, the reactor automatically shutdown following the loss of offsite power. Emergency diesel generators automatically started and loaded to the emergency busses. Diesel driven Auxiliary feedwater pumps maintained steam generator levels. All safety systems functioned as designed.

The licensee declared an unusual event at 8:56 p.m. (CDT), in accordance with its emergency classification system. The unusual event was terminated at 10:17 p.m. (CDT), after off-site power was restored.

The loss of off-site power has been attributed to an explosion and possible fire in an electrical distribution system substation (off-site). Due to an electrical malfunction (pole disagreement) of the bus tie breaker to the off-site feeder line, the loss of off-site power feedback into the site distribution ring bus resulted in backup breakers opening, causing a loss of power to the System Auxiliary Transformer (SAT).

Upon loss of power to the SAT, the 6900 VAC power supplies to the reactor coolant pumps (RCPs) are designed to automatically fast transfer to the Unit Auxiliary Transformer thereby maintaining reactor coolant flow and preventing a reactor trip. An additional design feature on the RCP power supply breakers, which aids in the fast transfer are the over current (OC) trip time delay relays. In this case, the 1C RCP time delay relay could not function due to a piece of cardboard inserted between the contacts of the relay, resulting in tripping the 1C RCP from an instantaneous OC signal. The loss of the 1C RCP resulted in a reactor trip on "RCP low flow above P-8." The reactor trip resulted in a main turbine generator trip and the loss of the Unit Auxiliary Transformer (UAT). With the loss of the off-site feeder power, i.e. the SAT and the main turbine generator i.e. the UAT, the Unit Emergency Diesel Generators auto started, closed in on the Emergency Safety Features (ESF) buses, sequenced on the vital ESF loads and maintained the unit on natural circulation cooling until forced cooling could be restored by starting a RCP from off-site power.

The licensee is investigating the cause of the pole disagreement malfunction on the off-site feeder line and the cause of the cardboard placement in the 1C RCP OC trip time delay relay.

The Unit is currently in the hot standby mode. Region III (Chicago) will continue to monitor the licensee's course of action.

The State of Illinois will be notified.

The Headquarters Duty Officer was first notified of this event at 10:19 p.m. (EDT), October 16, 1988. This information is current as of 9 a.m. (CDT), October 18, 1988.

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