

DMB

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 staff on this date.

Facility: Duane Arnold Nuclear Power Plant
Iowa Electric Light & Power Company
Cedar Rapids, Iowa

Docket No. 50-331

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

Subject: AUXILIARY TRANSFORMER FAILURE

At 1:34 a.m. (CST) on Sunday, November 4, 1984, while operating at 58% power, the facility experienced an explosion and fire in the plant's auxiliary transformer. This resulted in the loss of power to the station's non-essential buses and caused a turbine control valve fast closure which resulted in a reactor trip. All systems responded to the trip as required and no other problems were experienced with the plant shutdown.

When the auxiliary transformer failed the explosion and heat generated caused not only the automatic deluge system for the auxiliary transformer to initiate but also caused the deluge system on the adjacent Start Up transformer (separated by a concrete wall) to initiate. The combination of the explosion, heat and deluge system resulted in a "lock out" of the Start Up transformer output breaker, thus it not only did not pick up the non-essential loads lost by the auxiliary transformer, but it also lost the essential loads that it was supplying.

These essential loads were automatically picked up by the standby transformer. Thus, all of the Emergency Core Cooling Systems were fully powered during this event.

Plant operations personnel very alertly manually started the High Pressure Cooling Injection System (HPCI) and maintained the reactor water level. (The HPCI would have automatically started on low level). Later, the operation personnel also manually started the Reactor Core Isolation Cooling System (RCIC) as a backup to assure continued control of the reactor water level.

The emergency diesel generators also auto-started and came up to voltage and speed but were never called upon to supply power.

The auxiliary transformer deluge system automatically started and contained the fire. The plant fire brigade responded and extinguished the fire. The local fire department responded but were not called upon to perform.

Initial investigations and observations by the licensee indicate that the cause of the explosion and fire was due to an internal short circuit inside of the auxiliary transformer. As a precautionary measure the licensee analyzed a sample of the oil from the Start Up transformer for moisture or indications of an insulation break down before returning that unit to service.

During the event, the Emergency Notification System (ENS) was out of service when the AT&T power relays failed to function when the essential buses shifted.

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PNO-III-84-092 PDR

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Communications were conducted by commercial lines until the ENS phones were restored.

An Unusual Event was declared at 1:47 a.m. (CST) when the non-essential busses were lost and was terminated at 4:37 p.m. (CST) when the Start Up transformer was placed in service.

The plant is currently in the cold shutdown mode.

The State of Iowa will be notified.

This information is current as of 11:00 a.m. CST November 5, 1984.

Contact: *D. Boyd*
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RW
R. Warnick (FTS 388-5575)

C.F.P.

DISTRIBUTION:

H. St. <u>12:50</u>	MNBB <u>1:11</u>	Phillips <u>1:48</u>	E/W <u>12:41</u>	Willste <u>1:24</u>
Chairman Palladino	EDO	NRR	IE	NMSS
Comm. Roberts	PA		OIA	RES
Comm. Asselstine	MPA		AEOD	
Comm. Bernthal	ELD	Air Rights <u>1:29</u>		MAIL:
Comm. Zech		SP	INPO <u>1:53</u>	ADM:DMB
SECY			NSAC <u>1:35</u>	DOT: Trans Only
ACRS				
CA				
PDR				

Applicable Resident Site 1:12

Regions I 1:36, II 1:44, IV 1:51, V 2:05 Licensee (Corporate Office) 2:18