

A 07/07/78

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50-316

REC: KEPPLER J G  
NRC

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IN & MI PWR

DOC DATE: 06/29/78  
DATE RCVD: 07/05/78

DOCTYPE: LETTER NOTARIZED: NO

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SUBJECT:

LTR 1 ENCL 1

LICENSEE EVENT REPT (RO 50-316/78-037) ON 06/15/78 CONCERNING BOTH EMERGENCY DIESEL GENERATORS WERE PLACED IN A CONDITION WHERE NEITHER ENGINE WAS CAPABLE OF AUTOMATIC START, IN VIOLATION OF APPENDIX A TECH SPEC 3.8.1.1... W/ATT.

PLANT NAME: COOK - UNIT 2

REVIEWER INITIAL: XJM  
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POWER SYS BR\*\*W/ENCL

EXTERNAL:

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A/04

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**INDIANA & MICHIGAN POWER COMPANY**

DONALD C. COOK NUCLEAR PLANT  
P.O. Box 458, Bridgman, Michigan 49106

*D. Stanham*  
FILE  
RECEIVED DISTRIBUTION SERVICES UNIT  
1978 JUL 19 PM 1 49  
US NRC  
DISTRIBUTION SERVICES  
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June 29, 1978

Mr. J.G. Keppler, Regional Director  
Office of Inspection and Enforcement  
United States Nuclear Regulatory Commission  
Region III  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Operating License DPR-74  
Docket No. 50-316

Dear Mr. Keppler:

On June 16, 1978, we informed NRC Region III verbally and in writing of a violation of the Unit 2 Appendix A Technical Specification Section 3.8.1.1b wherein both emergency diesel generators were inadvertently removed from service during maintenance. Our investigation into this event is completed and this report is submitted as required by Appendix A Technical Specification Section 6.9.1.8.

We have discussed this serious matter with management of the American Electric Power Service Corporation and together formulated the "Corrective Actions Taken to Prevent Recurrence." I believe these actions will go a long way towards not only preventing recurrence of this event on the emergency diesel generators, but will also prevent similar incidents from occurring on other safety-related equipment.

The American Electric Power Service Corporation management was at the plant on May 3-4, 1978, to discuss the urgent need to reduce the number of Licensee Event Reports. At that time we jointly came up with several action items which are being followed through to stem potential problems at the source.

Although this recent incident is particularly disturbing, we in management are taking positive steps to enhance the quality of our operations and the support of the plant by the American Electric Power Service Corporation.

In addition to the corrective actions stated in the attached Licensee Event Report, we will review our current practice of training the plant operating and maintenance staff for work of this type and will augment retraining and requalification as necessary.

Sincerely,

D.V. Shaller  
Plant Manager

cc: See Attached List

JUL 03 1978

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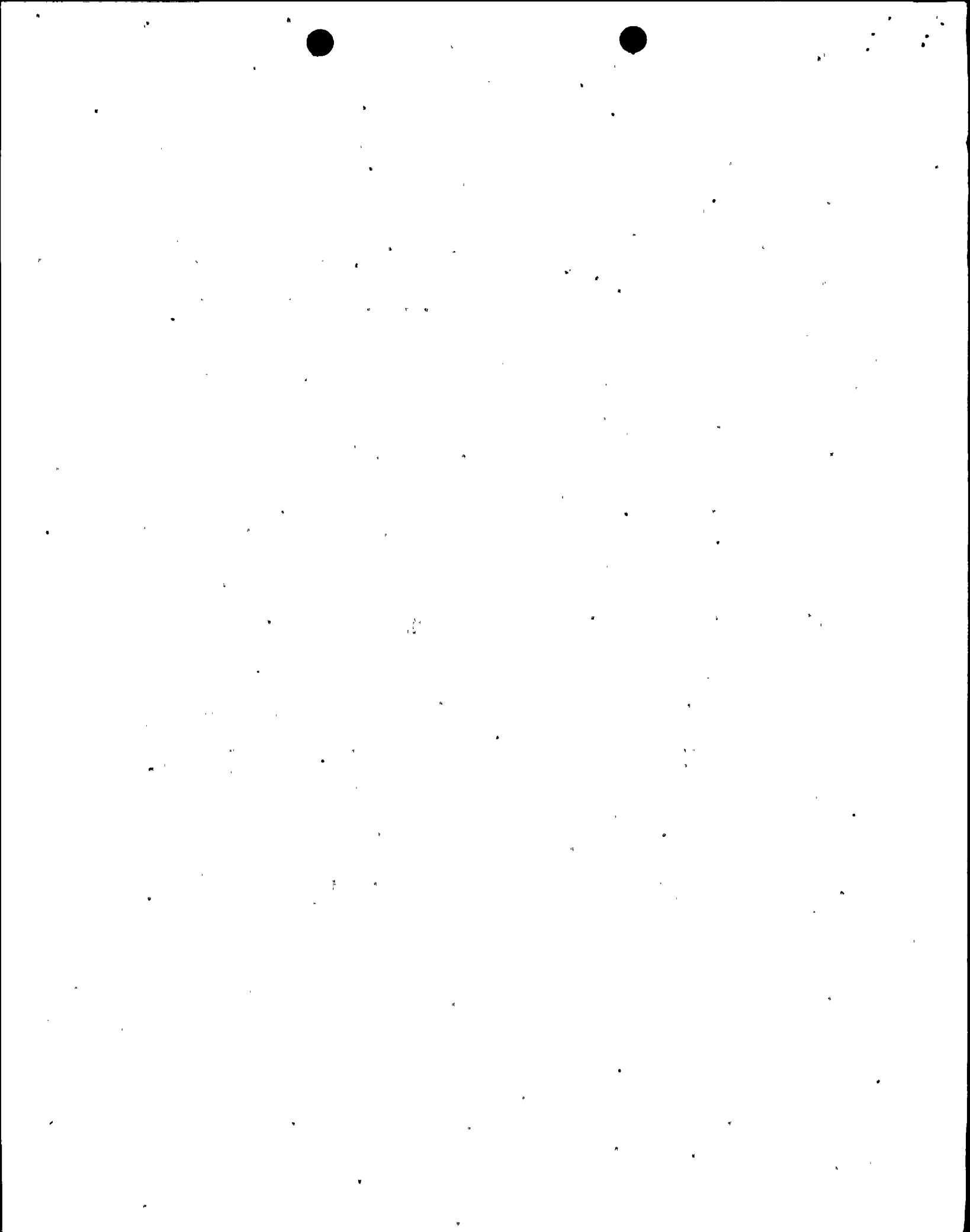
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10/10/10





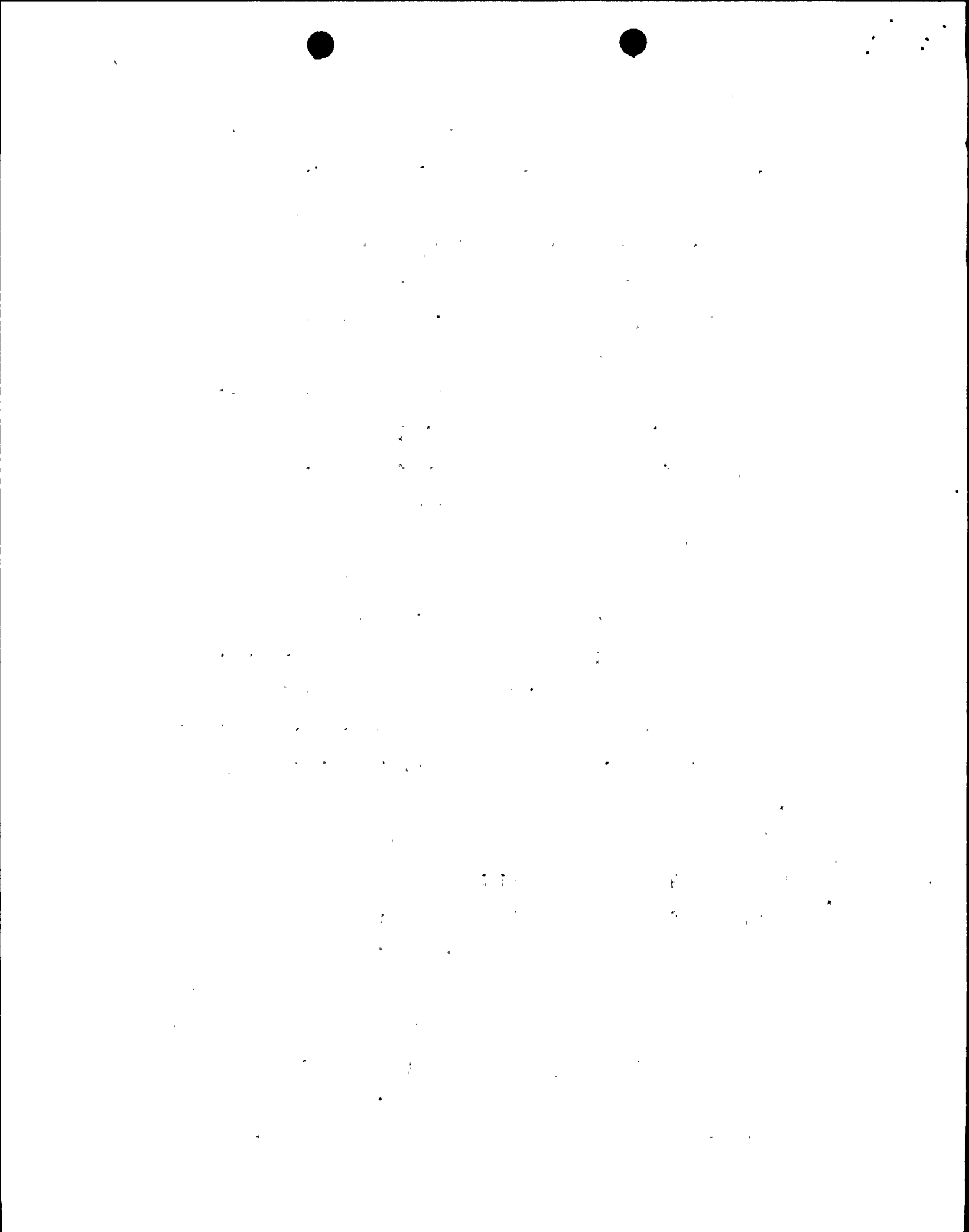
(A) Description of the Event:

In Mode 1 the Emergency Diesel Generators are normally lined up for automatic start and loading if required.

At 1109 hours on June 15, 1978 the DD Emergency Diesel Generator (EDG) was started manually and paralleled with the system because it had been reported there was a fuel oil leak on an injector. The CD Emergency Diesel Generator was stopped at 1153 hours after locating the fuel leak. The "AB" Emergency Diesel Generator was started manually at 1213 hours to verify its operability as required by Technical Specification 3.8.1.1 Action a. The "AB" Emergency Diesel Generator was stopped at 1322 hours after being proven operable.

Clearance Permit 9350 was prepared by the Shift Operating Engineer (SOE) at 1345 on June 15, 1978 to place the CD-EDG out of service to repair the leaking injector. The SOE gave the Clearance Permit to the Unit Supervisor (US) for performance. The US instructed the Auxiliary Equipment Operator (AEO) to hang the Clearance Tags. The CD-EDG output breaker control switches located in the Unit 2 Control Room were placed in the "Pull to Lockout" position by the US and the AEO placed the tags on the control switches. Placing the circuit breaker control switches in the "Pull to Lockout" position prevents any automatic signal from starting the engine. The AEO then proceeded to the EDG rooms to close and place tags on the Starting Air Pilot Valves for the engine. The Starting Air Pilot Valves were being closed to prevent being able to start the engine manually. The AEO entered the wrong EDG room and closed and tagged the Starting Air Pilot Valves for the AB-EDG. The four tags for Clearance Permit 9350 were recorded as being in place at 1351 hours on June 15, 1978. The Maintenance





Man who was to repair the leaking fuel injector recorded he checked and accepted the Clearance Permit at 1410 hours on June 15, 1978. The Maintenance Man made the repairs and released his Clearance Permit at 1620 hours on June 15, 1978. By this time, the Operating Shift had changed and a new shift was in charge of the plant. The SOE directed the US to have the Clearance Permit Tags picked up and the circuit breaker control switches and Starting Air Pilot Valves returned to their normal position. The US directed the AEO to remove the tags from the CD-EDG Starting Air Pilot Valves and to open the valves. The AEO entered the CD-EDG room and found the Starting Air Pilot Valves open and no tag on them. He immediately reported this to the US. The US directed the AEO to check the AB-EDG to see if the tags were incorrectly placed. The AEO found that the AB-EDG Starting Air Pilot Valves had been closed and tagged. The AB-EDG valves were recorded as open at 1645 hours.

Placing the CD-EDG control switches in the "Pull to Lockout" position prevented the CD-EDG from automatically starting and loading on a demand signal. Shutting the Starting Air Pilot Valves on the AB-EDG prevented air from starting the AB-EDG on any signal, manual or automatic. Therefore both the AB-EDG and CD-EDG were inoperable in violation of Technical Specification 3.8.1.1 for a period of three hours.

(B) Cause of the Event

The primary cause of this event was operator error by the AEO. The AEO mistakenly entered the wrong EDG room and closed and tagged the wrong Starting Air Pilot Valves.



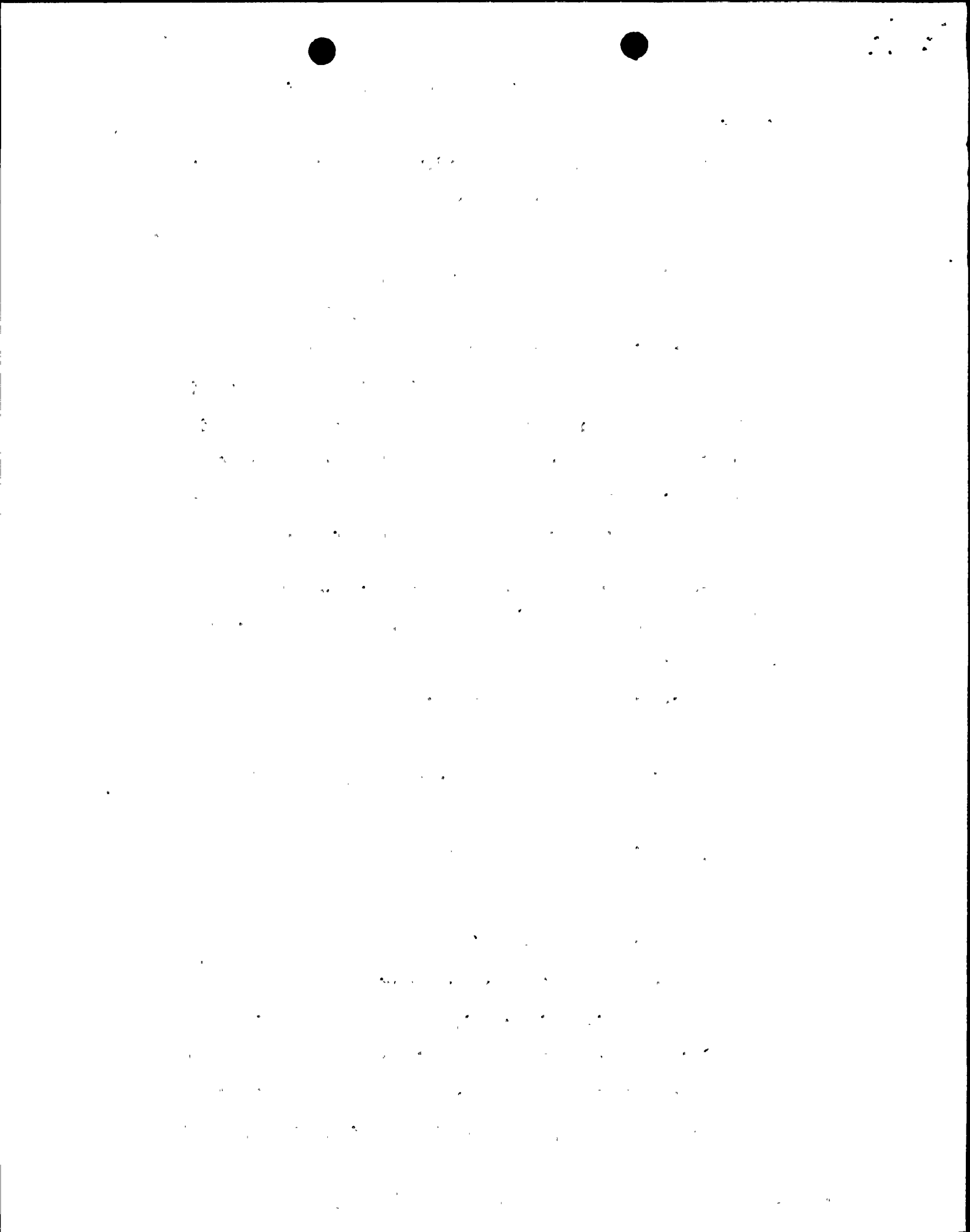
Secondary causes of this event were, (1) the signs to identify the EDG rooms had not been made and installed. Most of the rooms in the two Units are mirror image from the center line of the plant. This is not true of the EDG rooms. In both Units the AB-EDG room is to the right of the center line and CD-EDG is to the left of the center line. Also the first door off the hallway a person comes to on Unit 1 is the AB-EDG room and on Unit 2 the first door off of the hallway is the CD-EDG room. The Maintenance Man involved in making the repairs verified the tags correctly placed in the Control Room but did not verify the tags correctly placed on the Starting Air Pilot Valves. This would not have prevented the event but would have reduced the amount of time that both EDG were inoperable.

(C) Corrective Action Taken At Time Event Was Discovered

The US directed the AEO to check the AB-EDG to see if the wrong Starting Air Pilot Valve had been shut. The AB-EDG Starting Air Pilot Valves were immediately opened and the tags were removed. The CD-EDG was started at 1655 hours and paralleled with the system. There were no more fuel oil leaks and the CD-EDG was declared operable at 1807 hours. Opening the Starting Air Pilot Valves had restored the AB-EDG to an operable condition.

(D) Safety Evaluation of the Event

The Emergency Diesel Generators provide a backup to the two Technical Specification required independent off-site transmission networks. Throughout this event both of these off-site transmission networks were operable and the circuit breaker lineup as required by Technical Specification 4.8.1.1.1a



had been performed within the required time frame when the CD-EDG was removed from service.

One of the independent off-site sources is available on automatic and instantaneous transfer when normal auxiliary power is lost. The second source is a 69KV transmission line which experience has shown can be manually connected to our plant busses in less than two minutes.

Further than this, we recently added another source of auxiliary power supply over that required by our operating license. This power supply was also available during the time of this incident.

In the event the off-site transmission sources had been lost the US would have immediately known the AB-EDG did not start. The AB-EDG could have been checked out and the Starting Air Pilot Valves opened and the engine started in an estimated 5 minutes.

This is the first instance at the Cook Nuclear Plant where both diesel generators have been inadvertently made inoperable. Action item d in technical specification 3.8.1.1 requires that with two diesel generators inoperable at least one of the inoperable diesel generators must be restored to operable status within two hours or be in at least hot standby within the next six hours and in cold shutdown within the following 30 hours. During this incident both diesel generators were inoperable for three hours which is within the 8 hour time period specified by the technical specifications necessary to protect the health and safety of the public.



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(E) Corrective Action Taken to Prevent Recurrence

- (1) The Operations Superintendent directed that signs be placed directly on the doors to all four EDG rooms to identify the equipment in the room by Unit and equipment. This was accomplished prior to 2400 hours on June 15, 1978.
- (2) The entrances to all rooms containing safety-related equipment shall be marked by placing a sign designating the unit and equipment in the room. This will be completed by October 1, 1978.
- (3) In the future, when an emergency diesel generator is to be removed from service, the other emergency diesel generator will be proven operable and will then be left running until the emergency diesel generator being removed from service has been isolated, tags placed as required and the clearance permit accepted by the individual who will be performing the designated work.
- (4) PMI 2110 Equipment Control - Clearance Permit System, as written, was violated in this instance. This instruction and the clearance permit form require the person who accepts the clearance permit to check the proper tagging prior to accepting the clearance. Management has taken additional steps to enforce compliance. For all Technical Specification identified equipment, we will require independent verification of correct tagging and isolating if the plant is in a mode where the equipment is required. This independent verification will be performed by Operations Department personnel prior to presenting the clearance permit to the individual doing the work for verification prior to his acceptance. For non-Technical Specification identified equipment, the independent verification will be performed by the person who will accept the clearance permit or his supervisor.





- (5) The AEO who closed and tagged the wrong Starting Air Pilot valves was reprimanded in writing for his error.
- (6) The Operations Superintendent met with the SOE and Operating Engineers for all four shifts to discuss this event and the severity of other recent events which have occurred at the plant. He also pointed out that more severe disciplinary actions would be taken in the future for careless operator errors.

