

UNITED STATES
NUCLEAR REGULATORY COMMISSION
~~ATOMIC ENERGY COMMISSION~~
DIRECTORATE OF REGULATORY OPERATIONS
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

TELEPHONE
(312) 858-2660

A. RO Inspection Report No. _____

Transmittal Date : _____

Distribution:

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Regulatory Standards (3)
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Distribution:

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B. RO Inquiry Report No. _____

Transmittal Date : _____

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RO:HQ (5)
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C. Incident Notification From: Indian & Michigan Elec. Co., Docket No. 50-315
(Licensee & Docket No. (or License No.))

Transmittal Date : FEB 14 1975

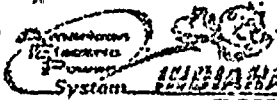
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INDIANA & MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT
P.O. Box 458, Bridgman, Michigan 49108

February 7, 1975

Mr. J.G. Keppler, Regional Director:
Directorate of Regulatory Operations
United States Nuclear Regulatory Commission:
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Operating License DPR-58
Docket No. 50-315
AEO-50-315/75-3

Dear Mr. Keppler:

This report is to inform you of an Abnormal Environmental Occurrence which occurred at the Donald C. Cook Nuclear Plant at approximately 1510 hours on February 6, 1975.

An unsampled release of a waste holdup tank was made in violation of Appendix "B" Technical Specifications 2.4.2.b and 2.2.3.3.


The South Waste Evaporator Condensate Tank was released to the discharge tunnel without having been sampled for radioactivity and boron concentration.

The radioactivity monitor (R-18) of the Radiation Monitoring System in the discharge line which was in operation did not reach the alarm point and the recorder trace indicated no radioactivity in the release. Estimated amount of radioactivity based upon the history of prior planned releases and analysis of the source tank indicated a release of approximately 47 μ Ci tritium.

An investigation is still in progress to determine the cause of the error and action to prevent recurrence. However, initial indications are that an error in the written procedure caused the unplanned release.

Our conservative estimates indicate that the discharge was barely above the minimum detectable activities and below the allowable limits for boron discharges. Based upon these estimates, the health and safety of the public has not been affected.

The NRC Resident Inspector, Mr. K.R. Baker, was informed of this event by telephone at 2010 hours, February 6, 1975.


R.W. Jurgensen
Plant Manager

**AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)**

CONTROL NO: 1550

FILE: INCIDENT REPORT

FROM: American Electric Power New York, New York 10004 Mr. J.E. Dolan			DATE OF DOC 2-3-75	DATE REC'D 2-11-75	LTR x	TWX	RPT	OTHER
TO: NRC			ORIG 1 signed	CC	OTHER	SENT AEC PDR <u>XXX</u> SENT LOCAL PDR <u>XXX</u>		
CLASS	UNCLASS	PROP INFO	INPUT	NO CYS REC'D 1		DOCKET NO: <u>50-315/316</u>		

DESCRIPTION:

Ltr reporting an abnormal occurrence at the D.C. Cook facility....concerning a deficiency ...diode failures in the Engineered Safe-guards System test circuitry.....

ENCLOSURES:

ACKNOWLEDGED

DO NOT REMOVE

PLANT NAME: D.C. Cook

FOR ACTION/INFORMATION

2-12-75 JB

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✓ OGC, ROOM P-506-A	✓ MACCARRY	GAMMILL	GEARIN (S)	SALTZMAN
✓ GOSSICK /STAFF	✓ KNIGHT	✓ KASTNER	✓ GOULBOURNE (S)	B. HURT
✓ CASE	✓ PAWLICKI	BALLARD	KREUTZER (E)	
GIAMBUSSO	✓ SHAO	SPANGLER	LEE (S)	<u>PLANS</u>
BOYD	✓ STELLO		MAIGRET (S)	MCDONALD
MOORE (S) (BWR)	✓ HOUSTON	<u>ENVIRO</u>	REED (E)	CHAPMAN
DEYOUNG (S) (PWR)	✓ NOVAK	MULLER	✓ SERVICE (S)	DUBE w/input
SKOVHOLT (S)	✓ CROSS	DICKER	✓ SHEPPARD (S)	E. COUPE
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REG. OPR	✓ LAINAS	PROJECT LDR	WILLIAMS (E)	
✓ FILE & REGION	✓ BENAROYA		WILSON (S)	
✓ T.R. WILSON	✓ STEELE	✓ HARLESS	INGRAM (S)	
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1-NSIC (BUCHANAN)	1-CONSULTANTS	1-G. ULRIKSON, ORNL
1-ASLB	NEWMARK/BLUME/AGBABIAN	1-AGHED (RUTH GUSSMAN)
1-NEWTON ANDERSON		RM B-127 G.T.
5-ACRS SENT TO LIC. ASST.		1-J. RUNKLES, RM E-201
		G.T.

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AMERICAN ELECTRIC POWER Service Corporation

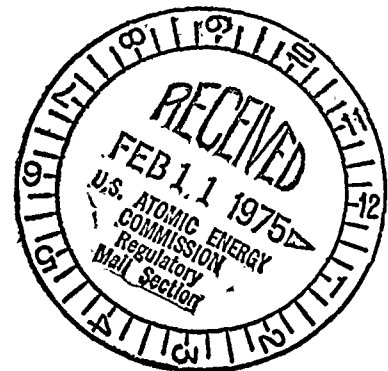
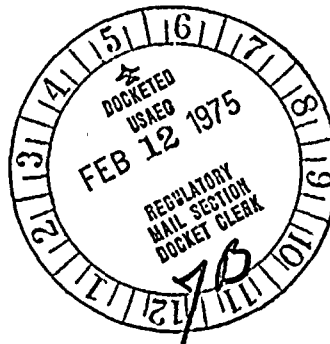


2 Broadway, New York, N. Y. 10004
(212) 422-4800

JOHN E. DOLAN
Executive Vice President
Engineering & Construction

February 3, 1975

Docket No. 50-315
and 50-316
CPPR No. 61
DPR No. 58



U.S. Nuclear Regulatory Commission
Directorate of Regulatory Operations
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Attention: Mr. James G. Keppler
Regional Director

Gentlemen:

Pursuant to the regulations of 10CFR50.55(e), we herewith submit this report concerning an equipment deficiency which occurred during construction at the Donald C. Cook Nuclear Plant, Bridgman, Michigan. Unit 1 is currently operating under AEC Operating License DPR-58 and Unit 2 is being constructed under AEC Construction Permit No. CPPR-61.

The equipment deficiency has been identified as diode failures in the Engineered Safeguards System test circuitry. This test circuitry is utilized to periodically verify the continuity of relay coils which are required for the proper operation of the Engineered Safeguards System.

The subject diodes are used for the sole purpose of protecting certain indicating lamps in the Engineered Safeguard System test circuitry from surge voltages generated when associated relays in this system are reset (de-energized). Such a relay reset would occur after these Engineered Safeguards System relays have been energized in the performance test. Diodes associated with these relays failed during initial performance testing of the system at which time detection of the failure occurred.

FEB 7 1975

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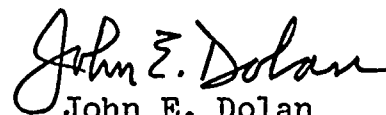
February 3, 1975

An investigation into the deficiency has determined that the peak reverse voltage rating of these particular diodes is insufficient to withstand the surge voltages generated during Engineered Safeguards System Relay de-energization. This resulted in diode failures and subsequent damage to Engineered Safeguards System circuitry.

Had the diode failure occurred undetected during plant operation, and had the Engineered Safeguards System been called upon to operate during the time interval that the failure remained undetected, proper operation of certain functions of the Engineered Safeguards System may have been prevented. However, the indications of this failure during the initial performance testing were clear and immediately discernable to both test and operations personnel. Therefore, due to the comprehensive testing program carried out on this equipment prior to plant startup, no possibility existed for placement of the subject Engineered Safeguards System test circuitry in service with this diode deficiency remaining undetected.

To prevent future damage, all diodes in the Engineered Safeguards System Test circuitry subject to failure by this mechanism have been removed and replaced with varistors with the appropriate voltage characteristics. All Engineered Safeguard circuitry, including any circuitry with the above modification, has been tested. All circuitry now operates within required specifications and no varistor failures have been experienced under repeated operation.

Very truly yours,



John E. Dolan
Executive Vice President
Engineering & Construction

JED:ma

cc: Gerald Charnoff, Esq.
R. C. Callen, Esq.
R. J. Vollen, Esq.
R. Walsh, Esq..
P. W. Steketee, Esq.
R. S. Hunter
R. W. Jurgensen - Bridgman

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Lichtenthaler and Whistler (1973). The total chlorophyll content was determined by the method of Arar and Johnson (1977). The carotenoid content was determined by the method of Lichtenthaler and Whistler (1973). The total carotenoid content was determined by the method of Arar and Johnson (1977). The total protein content was determined by the method of Lowry et al. (1951). The total lipid content was determined by the method of Bligh and Dyer (1959). The total carbohydrate content was determined by the method of Dubois and Gilles (1950). The total nucleic acid content was determined by the method of Burton (1956). The total ash content was determined by the method of AOAC (1970). The total moisture content was determined by the method of AOAC (1970). The total dry matter content was determined by the method of AOAC (1970). The total organic acid content was determined by the method of AOAC (1970). The total alkaloid content was determined by the method of AOAC (1970). The total saponin content was determined by the method of AOAC (1970). The total tannin content was determined by the method of AOAC (1970). The total flavonoid content was determined by the method of AOAC (1970). The total phenol content was determined by the method of AOAC (1970). The total terpenoid content was determined by the method of AOAC (1970). The total steroid content was determined by the method of AOAC (1970). The total glycoside content was determined by the method of AOAC (1970). The total alkaloid content was determined by the method of AOAC (1970). The total saponin content was determined by the method of AOAC (1970). The total tannin content was determined by the method of AOAC (1970). The total flavonoid content was determined by the method of AOAC (1970). The total phenol content was determined by the method of AOAC (1970). The total terpenoid content was determined by the method of AOAC (1970). The total steroid content was determined by the method of AOAC (1970). The total glycoside content was determined by the method of AOAC (1970).

Figure 1. The effect of the number of trials on the number of correct responses. The number of correct responses was significantly higher than the number of incorrect responses in all cases. The number of correct responses was significantly higher than the number of incorrect responses in all cases. The number of correct responses was significantly higher than the number of incorrect responses in all cases.

Figure 1 consists of two maps. Map (a) is a map of the Iberian Peninsula showing the location of the study area, which is a coastal region in the south. Map (b) is a map of the Iberian Peninsula showing the location of the study area, which is a coastal region in the south.

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Lichtenthaler and Whistler (1973). The total chlorophyll content was determined by the method of Arar and Cook (1980). The carotenoid content was determined by the method of Lichtenthaler and Whistler (1973). The total phenolic content was determined by the method of Singleton and Rossi (1965). The total flavonoid content was determined by the method of Zhishen et al. (1999). The total protein content was determined by the method of Lowry et al. (1951). The total lipid content was determined by the method of Folch et al. (1957). The total carbohydrate content was determined by the method of Dubois and Gilles (1950). The total ash content was determined by the method of AOAC (1990). The total acid content was determined by the method of AOAC (1990). The total base content was determined by the method of AOAC (1990). The total nitrogen content was determined by the method of Kjeldahl (1900). The total phosphorus content was determined by the method of Molybdenum blue (1900). The total sulfur content was determined by the method of Barium sulfate (1900). The total calcium content was determined by the method of Oxalate (1900). The total magnesium content was determined by the method of Magnesia (1900). The total potassium content was determined by the method of Potassium dichromate (1900). The total sodium content was determined by the method of Sodium chloride (1900). The total iron content was determined by the method of Iron(III) chloride (1900). The total copper content was determined by the method of Copper(II) sulfate (1900). The total zinc content was determined by the method of Zinc sulfate (1900). The total manganese content was determined by the method of Manganese sulfate (1900). The total cobalt content was determined by the method of Cobalt(II) chloride (1900). The total nickel content was determined by the method of Nickel(II) sulfate (1900). The total chromium content was determined by the method of Chromium(III) chloride (1900). The total boron content was determined by the method of Boric acid (1900). The total molybdenum content was determined by the method of Molybdenum trioxide (1900). The total selenium content was determined by the method of Selenium dioxide (1900). The total tellurium content was determined by the method of Telluric acid (1900). The total iodine content was determined by the method of Iodine (1900). The total bromine content was determined by the method of Bromine (1900). The total fluorine content was determined by the method of Hydrofluoric acid (1900). The total chlorine content was determined by the method of Hydrochloric acid (1900). The total oxygen content was determined by the method of Oxygen (1900). The total hydrogen content was determined by the method of Hydrogen (1900). The total carbon content was determined by the method of Carbon (1900). The total nitrogen content was determined by the method of Nitrogen (1900). The total phosphorus content was determined by the method of Phosphorus (1900). The total sulfur content was determined by the method of Sulfur (1900). The total calcium content was determined by the method of Calcium (1900). The total magnesium content was determined by the method of Magnesium (1900). The total potassium content was determined by the method of Potassium (1900). The total sodium content was determined by the method of Sodium (1900). The total iron content was determined by the method of Iron (1900). The total copper content was determined by the method of Copper (1900). The total zinc content was determined by the method of Zinc (1900). The total manganese content was determined by the method of Manganese (1900). The total cobalt content was determined by the method of Cobalt (1900). The total nickel content was determined by the method of Nickel (1900). The total chromium content was determined by the method of Chromium (1900). The total boron content was determined by the method of Boron (1900). The total molybdenum content was determined by the method of Molybdenum (1900). The total selenium content was determined by the method of Selenium (1900). The total tellurium content was determined by the method of Tellurium (1900). The total iodine content was determined by the method of Iodine (1900). The total bromine content was determined by the method of Bromine (1900). The total fluorine content was determined by the method of Fluorine (1900). The total chlorine content was determined by the method of Chlorine (1900). The total oxygen content was determined by the method of Oxygen (1900). The total hydrogen content was determined by the method of Hydrogen (1900). The total carbon content was determined by the method of Carbon (1900).

The map shows the northern Adriatic coastline from Trieste in the northwest to the Gulf of Genoa in the southeast. Sampling stations are indicated by numbered dots: 1 (near Trieste), 2 (further east), 3 (off the coast of Trieste), 4 (further east), 5 (off the coast of Trieste), 6 (further east), 7 (off the coast of Trieste), 8 (further east), 9 (off the coast of Trieste), and 10 (further east). The map includes latitude and longitude coordinates.