

JUL 22 1970

Chairman Seaborg
Commissioner Ramey
Commissioner Johnson
Commissioner Thompson
Commissioner Larson

**LOSS OF ELECTRICAL POWER OCCURRENCE
PACIFIC GAS AND ELECTRIC COMPANY
(HUMBOLDT BAY REACTOR)**

I am enclosing for your information a report on a
loss of electrical power occurrence at the Pacific
Gas and Electric Company's Humboldt Bay reactor
that occurred on July 17, 1970.

(Signed) HLP

**Harold L. Price
Director of Regulation**

**Enclosure:
Report, as stated**

**cc: General Manager (2)
General Counsel (2)
Secretary (2)**

bcc: GMKavanagh, AGMR RDO'Neill, OCR (2)
HLPrice, DR MShaw, RDT
CKBeck, DR JAHarris, PI
MMann, DR JDAnderson, INS
SHHanauer, DR DR Reading File
CLHenderson, DR REG Central File
LDLow, CO CO Regions I, II, III
PAMorris, DRL DJSkovholt, DRL IV &
EGCase, DRS LKornblith, CO
RFFraley, ACRS DZiemann, DRL
(3), rpt only
AGiambusso, CO

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DATE	7/21/70		7/22/70	7/22	7/22/70

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ATOMIC ENERGY COMMISSION

LOSS OF ELECTRICAL POWER OCCURRENCE
PACIFIC GAS AND ELECTRIC COMPANY (HUMBOLDT BAY REACTOR)

Report to the Director of Regulation
by the Director, Division of Compliance

The Division of Compliance was informed by a Pacific Gas and Electric Company representative by telephone at 9:15 p.m. on July 17, 1970, that a complete loss of offsite electrical power was experienced at the Humboldt Bay nuclear power plant at 9:21 a.m. on July 17, 1970. The loss of offsite power resulted in a depressurization of the primary system and the actuation of certain engineered safety features. The following information was obtained from the licensee and from Division of Compliance inspectors who arrived at the site on July 19, 1970:

Prior to the occurrence, the nuclear facility, Unit No. 3, was operating at 65 Mwe; Unit No. 1, a conventional plant, was shut down; and Unit No. 2, a conventional plant, was operating at 50 Mwe.

An electrical switching error at the offsite Humboldt substation, coupled with faulty relaying at two separate locations in the electrical distribution system, resulted in an electrical separation of the nuclear facility from the offsite transmission system and from the adjacent onsite operating conventional power plant, Unit No. 2.

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As a result of the loss of electrical power, the reactor plant scammed and the 60 kv emergency generator started. During the transient that followed, the reactor pressure increased to 1230 psig and one safety valve lifted. The pressure transient may have been amplified or extended by the failure of the emergency condenser system to operate because of a mechanical problem with a system valve. The increase in pressure, combined with the earlier loss of important electrical components and associated systems, caused a reactor low water level condition and actuation of the emergency reactor depressurization system. Depressurization of the primary system caused both low pressure emergency core cooling systems to operate as designed. The following facts are considered to be pertinent:

- a. The reactor pressure decreased from 1200 psig to 200 psig within one or two minutes.
- b. The recorded vessel metal temperature at the bottom of the reactor vessel dropped from 550° F. to 295° F. in one hour.
- c. The addition of approximately 1000 gallons of water to the primary system from the low pressure emergency core cooling systems resulted in a maximum chloride concentration in the primary system of 7.5 parts per million.

The licensee's investigation of the occurrence has resulted in

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the conclusion that the reactor core remained covered with water throughout the transient and that no nuclear safety problem resulted from the occurrence. There was no measurable release of radioactivity from the site as a result of the occurrence.

Reactivity and radiochemistry checks performed subsequent to the occurrence showed no anomalous conditions. The licensee plans to resume reactor operations in the near future.

The Division of Reactor Licensing is evaluating the safety considerations involved and has requested additional information from the licensee regarding their analyses of this occurrence. The Division of Compliance is continuing to obtain information from the Humboldt Bay site. We will inform you of significant findings.

The staff of the Joint Committee on Atomic Energy has been informed orally. The information provided will be confirmed by letter.

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