

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 89252

Date: February 17, 1974

Title: Three Related Abnormal Occurrences with Diesel Generator at Zion 2

The failure sequence was:

1. Two auxiliary feed pumps were out of service.
2. During testing of the diesel generator associated with the operable auxiliary feed pump, the diesel generator tripped on overspeed while starting.
3. Once the diesel was started, its output breaker would not close on the associated safety-related bus because of a relay failure.

Corrective action:

1. The synchro-speed setter was readjusted to its correct setting, which permitted the diesel to start without tripping out on overspeed.
2. A foreign object (screw and two washers) was removed from the failed relay and the relay was returned to service.

Design purpose of failed system or component:

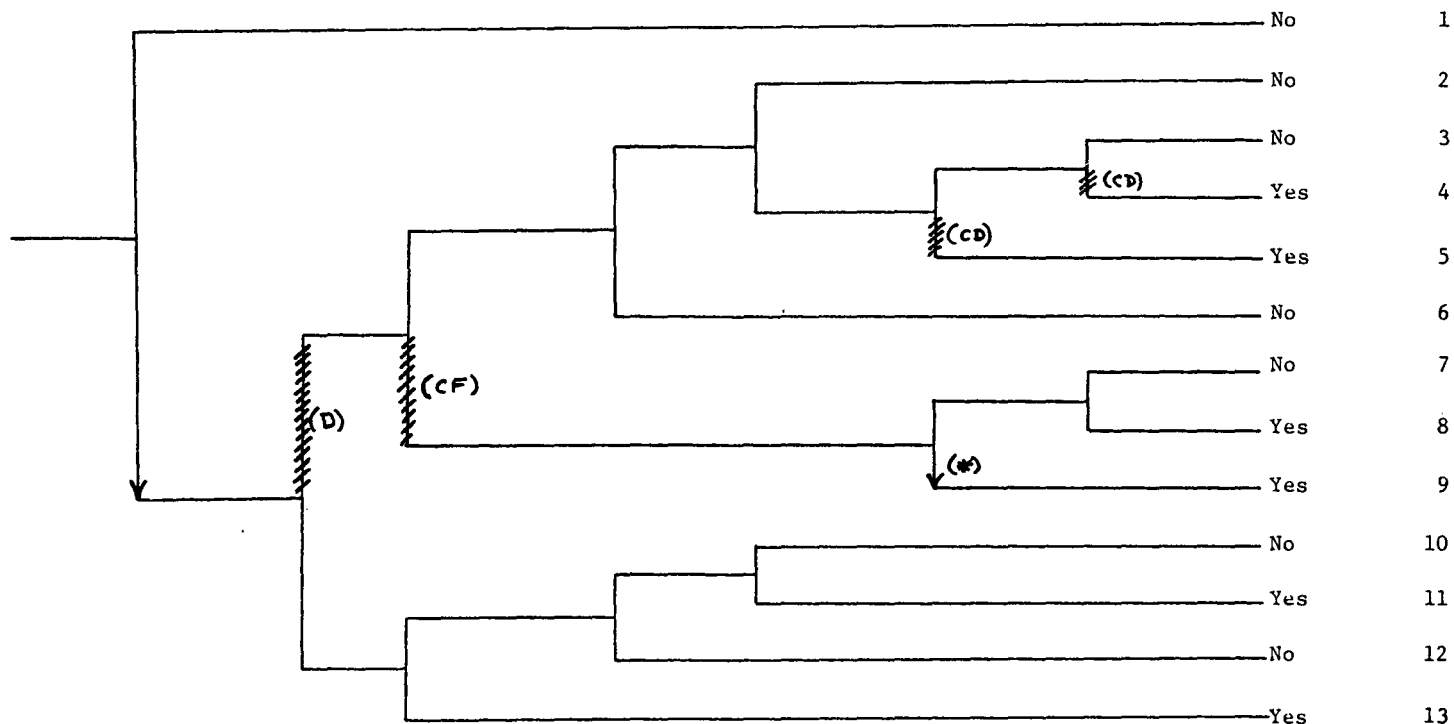
1. The diesel generators provide emergency electric power to safety related loads in the event of loss of offsite power.
2. The failed relay permits generator output breaker closure once the generator is up to frequency.

Unavailability of system per WASH 1400:* Emergency Electric Power: $1 \times 10^{-2}/D$

Unavailability of component per WASH 1400:* Diesel Generator: $3 \times 10^{-2}/D$
Relay, failure to energize: $1 \times 10^{-4}/D$

*Unavailabilities are in units of per demand D^{-1} . Failure rates are in units of per hour HR^{-1} .

Loss of Offsite Power	Turbine Generator Runs Back and Assumes House Loads	Emergency Power	Auxiliary Feedwater and Secondary Heat Removal	PORV Demanded	PORV or PORV Isolation Valve Closure	High Pressure Injection	Long Term Core Cooling	Potential Severe Core Damage	Sequence No.
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NSIC 89252 -- Sequence of Interest for Failure of Diesel Generator to Start and Load When Two AFW Pumps Were Out of Service at Zion 2

*Use of HPI following AFW failure not included in mitigating procedures.

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 89252

DATE OF LER: February 27, 1974

DATE OF EVENT: February 17, 1974

SYSTEM INVOLVED: Emergency electric power and auxiliary feedwater

COMPONENT INVOLVED: Diesel generator, diesel generator output breaker, and AFW pumps

CAUSE: The diesel generator failed to start due to incorrect synchro-speed setting, an output breaker relay failed to close because of a foreign object lodged in

SEQUENCE OF INTEREST: loss of offsite power the relay, and two AFW pumps were inoperable (reason not stated).

ACTUAL OCCURRENCE: Failure of diesel-generator to start and load when 2 AFW pumps were out-of-service.

REACTOR NAME: Zion 2

DOCKET NUMBER: 50-304

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 1040 MWe

REACTOR AGE: .15 yr

VENDOR: Westinghouse

ARCHITECT-ENGINEERS: Sargent & Lundy

OPERATORS: Commonwealth Edison Co.

LOCATION: 40 miles north of Chicago, Ill.

DURATION: 6.75 hours

PLANT OPERATING CONDITION: 25% power

SAFETY FEATURE TYPE OF FAILURE: (a) inadequate performance; (b) failed to start; (c) made inoperable; (d) _____

DISCOVERY METHOD: during testing

COMMENT: -