

NSIC Accession Number: 61565

Date: September 2, 1971

Title: Loss of Offsite Power and Failure of a Diesel Generator to Load at Palisades

The failure sequence was:

1. The Argenta No. 2 345KV line (one of three 345KV lines at the switchyard) tripped.
2. Failure of a "breaker failure relay" associated with the tripped line breaker resulted in the tripping of two other breakers on the ring bus, which caused a loss of offsite power.
3. Diesel generator No. 1 started and loaded its safety-related bus.
4. Diesel generator No. 2 started but its breaker did not close until the operator adjusted the synchroscope in preparation to close the breaker manually.

Corrective action:

Not specified (only LER abstract available).

Design purpose of failed system or component:

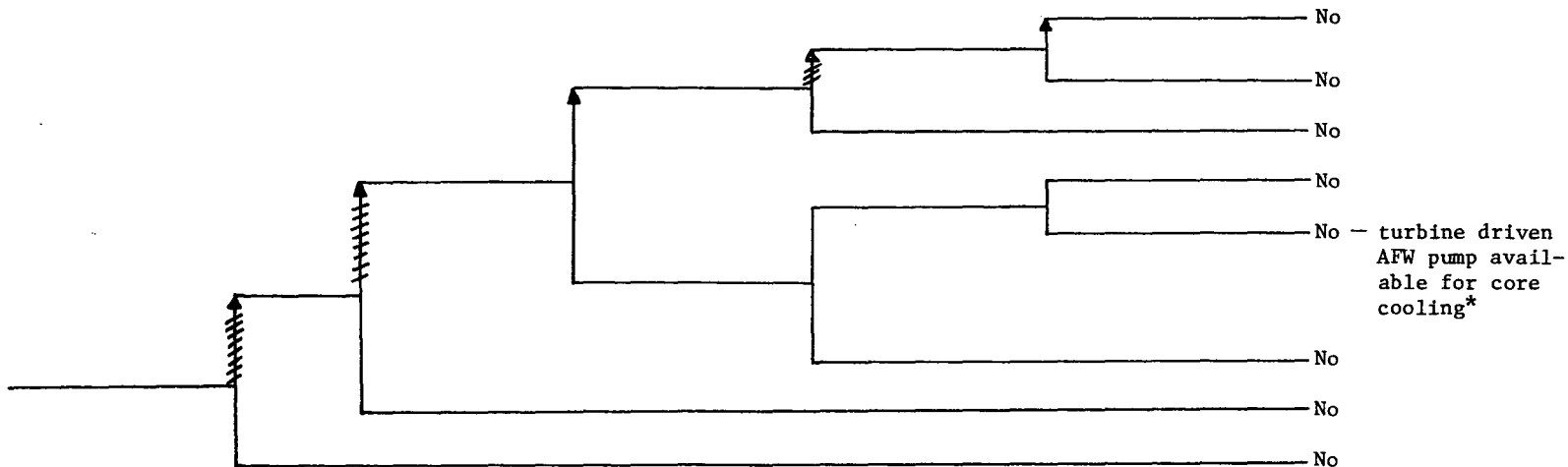
Offsite power provides electrical power to safety-related components when the unit generator is inoperable. The diesel generators provide a standby source of electric power for safety-related components when both the unit generator and the offsite power sources are not available.

Unavailability of system per WASH 1400:* Offsite Power: $2 \times 10^{-5}/\text{hr}$

Unavailability of component per WASH 1400:* Diesel-generator: $3 \times 10^{-2}/\text{D}$

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

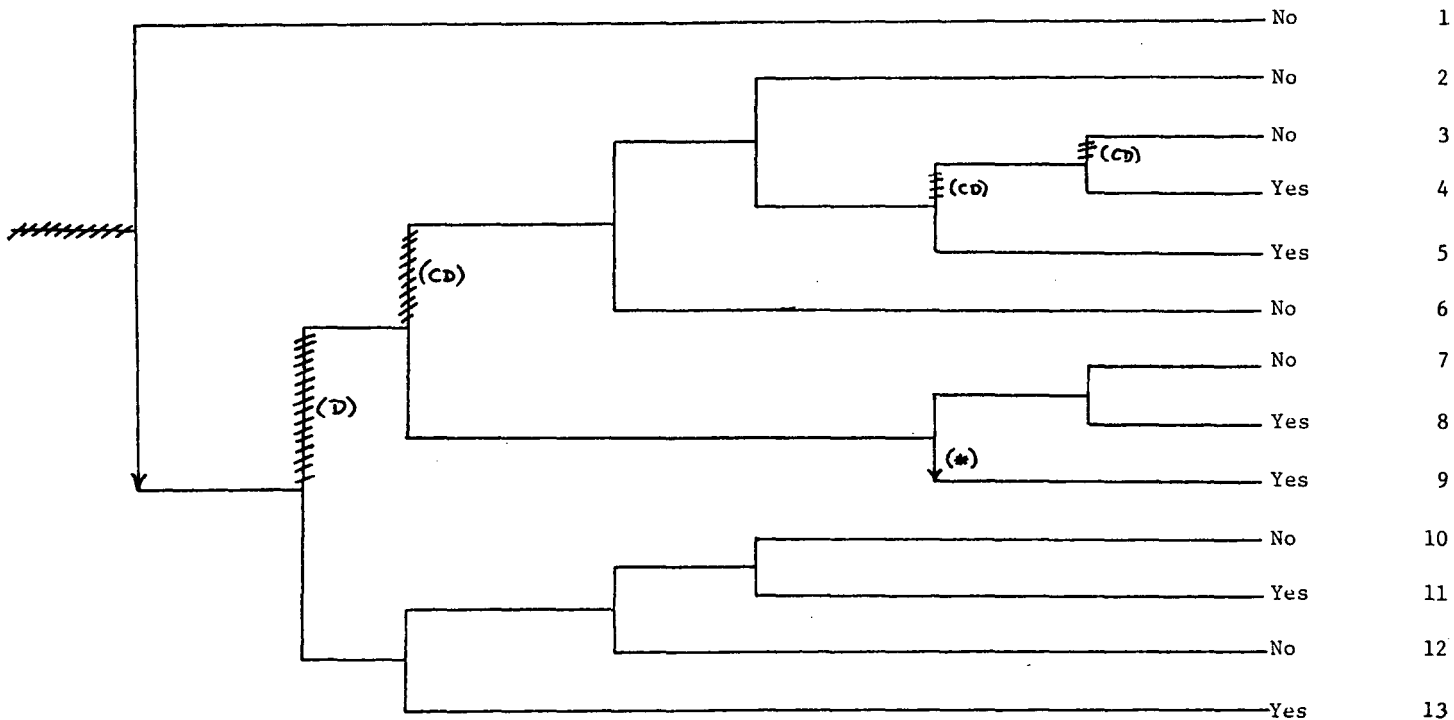
(Reactor Status Unspecified)	Loss of No. 2 Argenta 345KV Line	Line No. 2 Breaker Relay Failure Trips Two Additional Ring Bus Breakers, Resulting in a Loss of Off-site Power	Diesel Generator No. 1 Starts and Closes onto its Safety-Related Bus	Diesel Generator No. 2 Starts but Fails to Close Onto its Safety-Related Bus	Diesel Generator No. 2 Closes Onto its Bus When Operator Adjusts Synchroscope in Preparation for Closing D.G. Breaker Manually	Potential Severe Core Damage
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NSIC 61565 - Actual Occurrence for Loss of Offsite Power and Failure of a Diesel Generator to Load at Palisades

* provided the turbine-driven AFW pump is not dependent on A.C. power

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 61565 - Sequence of Interest for Loss of Offsite Power and Failure of a Diesel Generator to Load at Palisades

* Use of HPI following AFW failures not included in mitigation procedures.

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 61565

DATE OF LER: September 9, 1971

DATE OF EVENT: September 2, 1971

SYSTEM INVOLVED: offsite power; emergency on-site power

COMPONENT INVOLVED: switchyard breaker relay, diesel generator output relay

CAUSE: failure of switchyard breaker relay, failure to close for diesel generator breaker

SEQUENCE OF INTEREST: loss of offsite power

ACTUAL OCCURRENCE: Loss of offsite power and failure of a diesel generator to load

REACTOR NAME: Palisades

DOCKET NUMBER: 50-255

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 805 MWe

REACTOR AGE: .3 yr

VENDOR: Combustion Engineering

ARCHITECT-ENGINEERS: Bechtel

OPERATORS: Consumers Power Company

LOCATION: 5 miles south of South Haven, Mich.

DURATION: N/A

PLANT OPERATING CONDITION: not known

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

DISCOVERY METHOD: during operation

COMMENT: -