

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 36147

Date: July 15, 1969

Title: Loss of Offsite Power and Load Rejection at Haddam Neck

The failure sequence was:

1. One of the two 115KV offsite power lines (Montville line) was removed from service.
2. When the line was removed from service, trip inputs to the plant electrical system protection system were not defeated.
3. When the dispatcher opened other terminals on the Montville line, trip signals were generated which caused the two station service transformer low side breakers to open, resulting in a loss of offsite power.
4. Three of three diesel generators started and assumed safety related loads (one diesel generator loaded late).
5. One charging pump tripped during the starting sequence and one reactor coolant pump seal failed with excessive leakage (15 gpm seal injection required).

Corrective action:

1. Switching orders were revised to require defeat of trip signals from isolated lines.
2. The loop containing the leaking RCP seal was isolated for cooldown and evaluation.

Design purpose of failed system or component:

1. Offsite power provides electric power to safety-related components when the unit generator is inoperable.

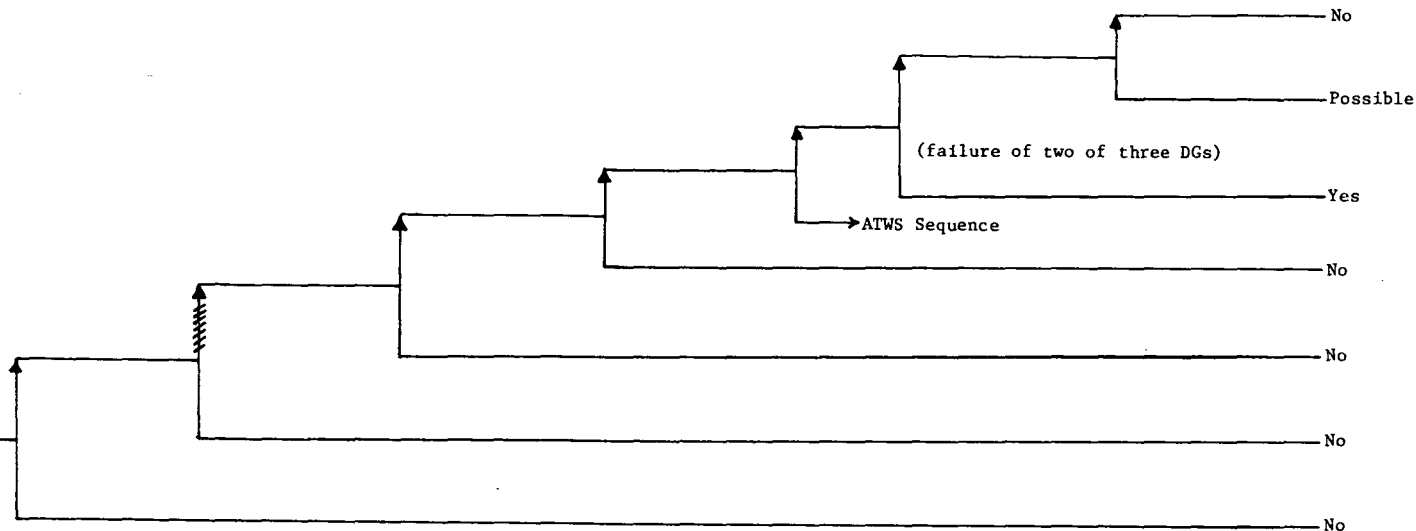
Unavailability of system per WASH 1400:\* Offsite power:  $2 \times 10^{-5}/\text{hr}$

Unavailability of component per WASH 1400:\* —

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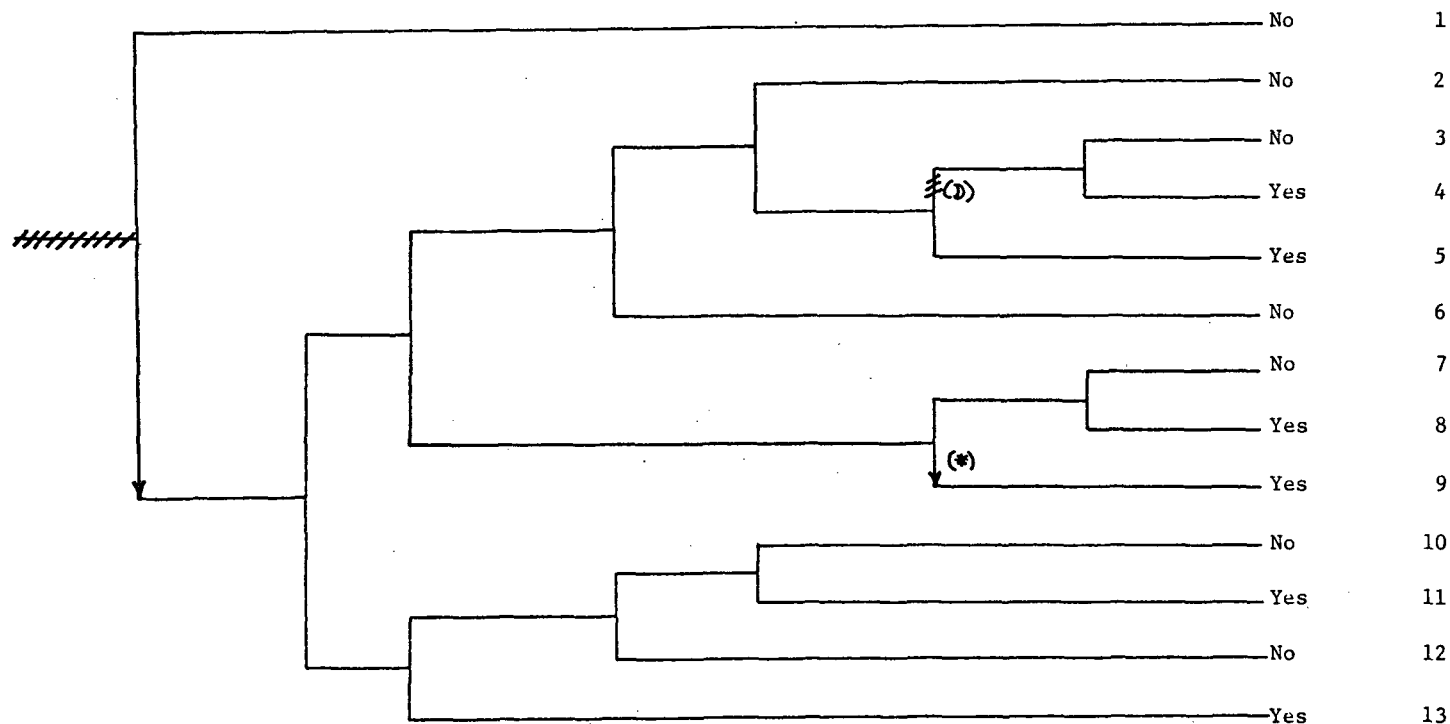
\*Unavailabilities are in units of per demand  $D^{-1}$ . Failure rates are in units of per hour  $\text{HR}^{-1}$ .

Reactor at Power with Generator Output of 480 MWe	115KV Montville Line Removed From Service	115KV Montville Line Trip Signal Inputs to Protection System Not Defeated	Opening of Other Terminals on 115KV Montville Line Generates Trip Signals Received at Haddam Neck	Both Service Transformer Low Side Breakers Trip, Resulting in a Loss of Offsite Power	Reactor Trip	Three of Three Emergency Diesel Generators Start and Load Their Safety-Related Buses	Auxiliary Feed-water System Provides AFW to Steam Generators	Potential Severe Core Damage
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NSIC 36147 - Actual Occurrence for Loss of Offsite Power and load Rejection at Haddam Neck

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 36147 - Sequence of Interest for Loss of Offsite Power and load Rejection at Haddam Neck

\* Use of HPI after failure of AFW was not included in mitigation procedure.

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 36147

DATE OF LER: July 24, 1969

DATE OF EVENT: July 15, 1969

SYSTEM INVOLVED: electric power

COMPONENT INVOLVED: station service transformer low side breakers

CAUSE: Procedural error resulted in trip signals from an isolated line being received and interpreted as a trip signal related to the single operating offsite power  
SEQUENCE OF INTEREST: loss of offsite power line. Operator error.

ACTUAL OCCURRENCE: reactor trip with loss of offsite power

REACTOR NAME: Haddam Neck

DOCKET NUMBER: 50-213

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 575 MWe

REACTOR AGE: 2.0 yr

VENDOR: Westinghouse

ARCHITECT-ENGINEERS: Stone & Webster

OPERATORS: Connecticut Yankee Atomic Power Co.

LOCATION: 13 miles east of Meridan, Conn.

DURATION: N/A

PLANT OPERATING CONDITION: at power

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

DISCOVERY METHOD: during operation

COMMENT: --