

# PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 123118

Date: March 9, 1977

Title: Both AFW Pumps Unavailable at Rancho Seco

The failure sequence was:

1. With the reactor at 100% power, AFW pump P-318 was tested prior to removing AFW pump P-319 from service for breaker maintenance.
2. When pump P-318 was shut down, the manual/overspeed trip was not properly reset. This resulted in both AFW pumps being unavailable for seven hours.

Corrective action:

The pump trip was correctly reset, the pump was tested, and returned to service.

Design purpose of failed system or component:

The auxiliary feedwater system provides steam generator cooling in the event the main feedwater system is unavailable.

Unavailability of system per WASH 1400: \* AFW (start + 8 hours):  $3.7 \times 10^{-5}$

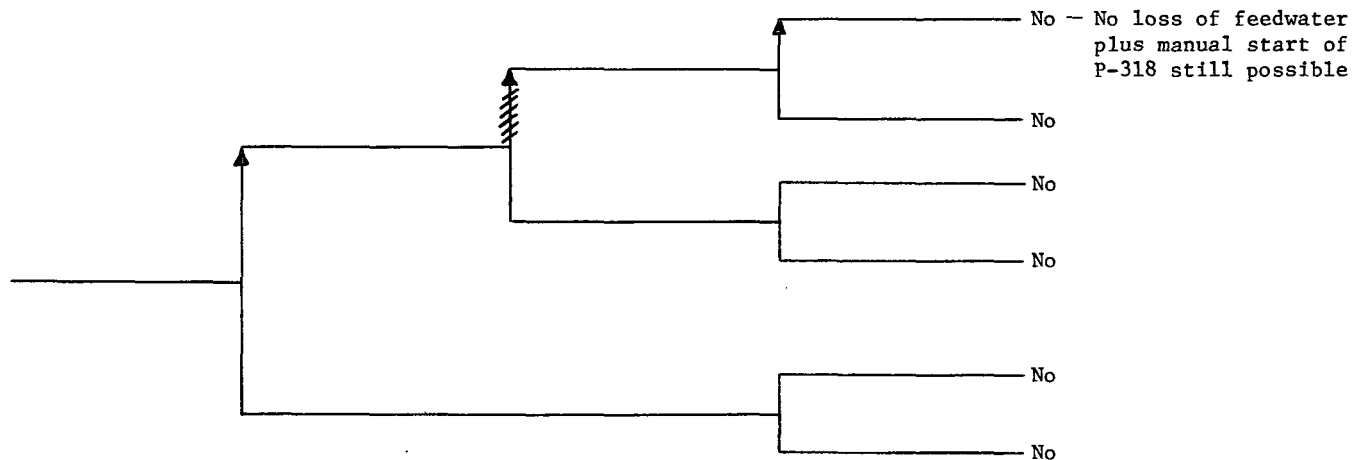
Unavailability of component per WASH 1400: \* Pump, failure to start:  $1 \times 10^{-3}/D$

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

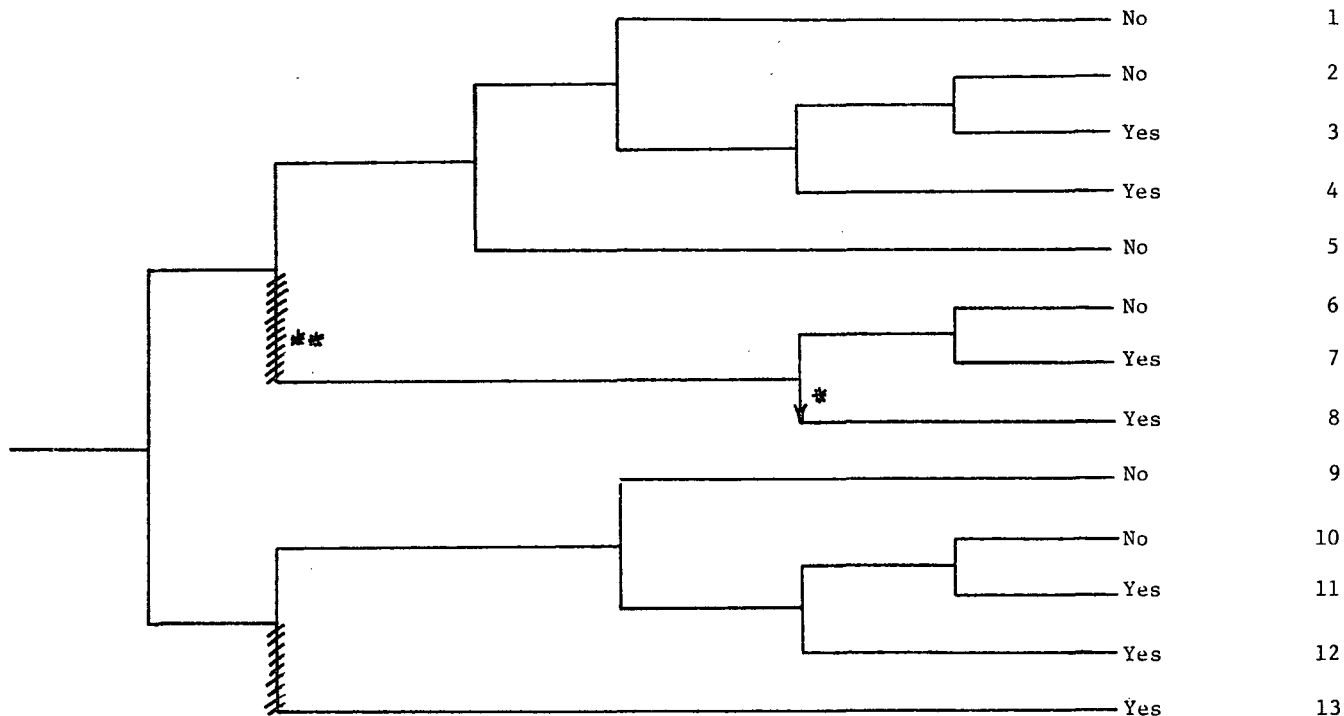
Reactor at 100% Power	AFW Pump P-318 Tested Prior to Removing AFW Pump P-319 From Service for Maintenance	Pump P-318 Incorrectly Reset Follow- ing Shutdown	Pump P-319 Removed From Service for Maintenance
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Potential  
Severe  
Core  
Damage



NSIC 123118 - Actual Occurrence for Both AFW Pumps Unavailable at Rancho Seco

Loss of Main Feedwater	Reactor Trip	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 123118 — Sequence of Interest for Both AFW Pumps Unavailable at Rancho Seco

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

\*\*Operator action required for degraded

# CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 123118

DATE OF LER: March 9, 1977

DATE OF EVENT: February 18, 1977

SYSTEM INVOLVED: Auxiliary feedwater

COMPONENT INVOLVED: Auxiliary feedwater pump

CAUSE: Improperly reset manual/overspeed trip mechanism

SEQUENCE OF INTEREST: Loss of main feedwater

ACTUAL OCCURRENCE: Unavailability of both auxiliary feedwater pumps  
while at power

REACTOR NAME: Rancho Seco

DOCKET NUMBER: 312

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 918 MWe

REACTOR AGE: 2.4 yr

VENDOR: B&W

ARCHITECT-ENGINEERS: Bechtel

OPERATORS: Sacramento Municipal Utility District

LOCATION: 25 miles SE of Sacramento, California

DURATION: 7 hours

PLANT OPERATING CONDITION: 100% power

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

DISCOVERY METHOD: Operator observation

COMMENT: