

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 133706

Date: December 11, 1977

Title: Control of Both Auxiliary Feed Pump Turbines Lost at Davis-Besse 1

The failure sequence was:

1. During testing, control over both auxiliary feedwater pump turbines was lost, rendering the pumps inoperable.
2. Control of the turbine for pump 1-1 was lost due to mechanical binding in the governor.
3. Control of the turbine for pump 1-2 was lost due to blown control power supply fuses for the speed changer motor.

Corrective action;

1. On pump 1-1, the roll pin which was binding was repositioned, cleaned, and lubricated.
2. On pump 1-2, the blown fuses were replaced, as were two relays suspected of sticking and causing the blown fuses.

Design purpose of failed system or component:

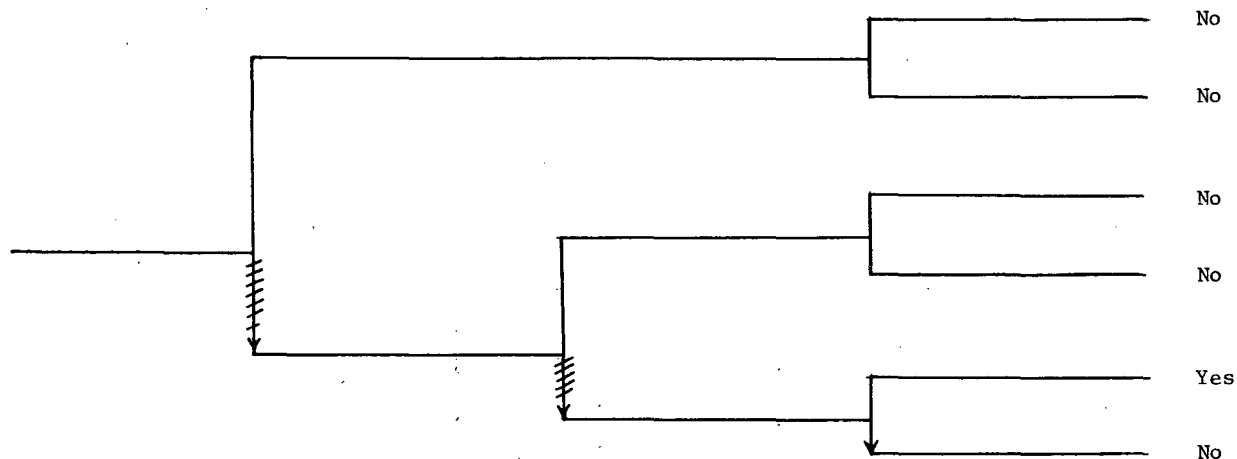
1. The auxiliary feedwater pumps provide RCS heat removal when the main feed system is unavailable.

Unavailability of system per WASH 1400:* Auxiliary feedwater: $3.3 \times 10^{-5}/D$

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

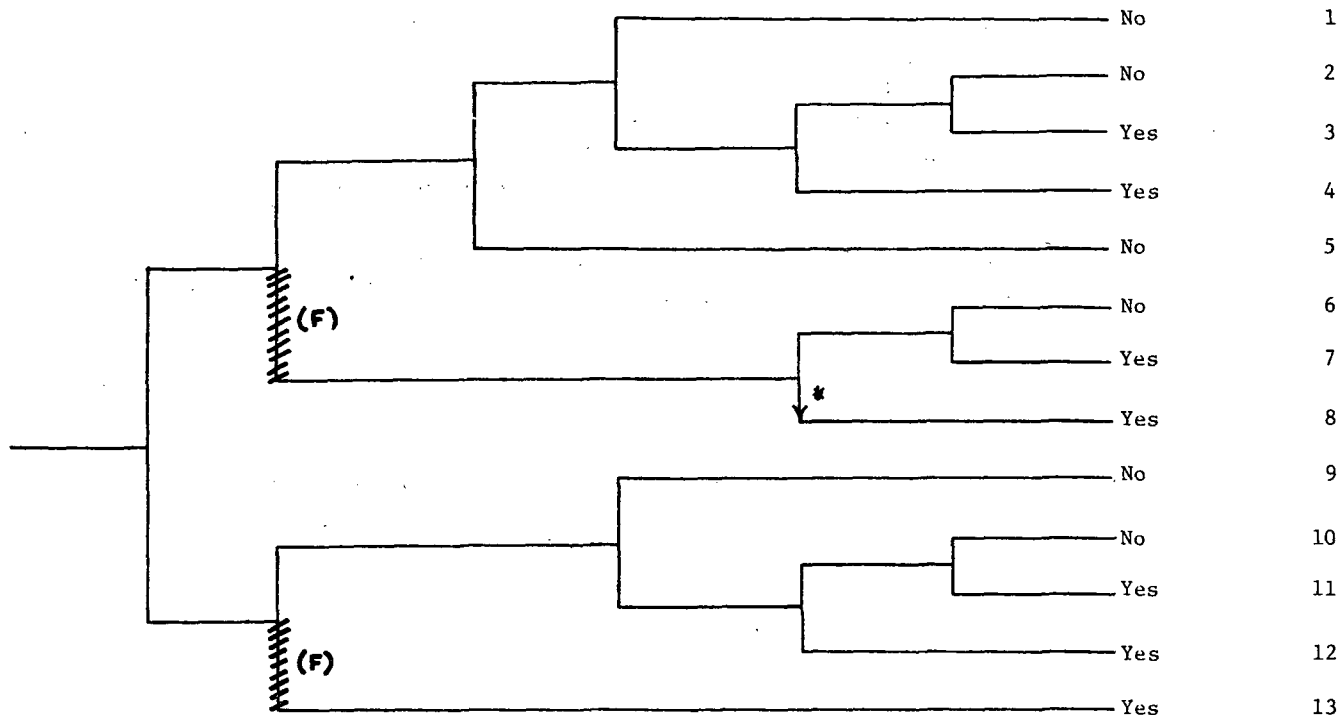
* Unavailabilities are in units of per demand D^{-1} . Failure rates are in units of per hour HR^{-1} .

Reactor in hot standby during "Reactor/Turbine Trip Test"	Auxiliary feedwater pump 1-1 operable	Auxiliary feedwater pump 1-2 operable	Auxiliary feedwater pump required	Potential Severe Core Damage
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NSIC 133706 — Actual Occurrence for Control of Both Auxiliary Feed Pump Turbines Lost at Davis-Besse 1

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 133706 — Sequence of Interest for Control of Both Auxiliary Feed Pump Turbines Lost at Davis-Besse 1

*not included in mitigation procedures

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 133706

DATE OF LER: January 3, 1978

DATE OF EVENT: December 11, 1977

SYSTEM INVOLVED: Auxiliary feedwater

COMPONENT INVOLVED: Auxiliary feedwater pump turbines

CAUSE: Mechanical binding, blown fuses

SEQUENCE OF INTEREST: Loss of feedwater

ACTUAL OCCURRENCE: Auxiliary feedwater pumps inoperable during testing.

REACTOR NAME: Davis-Besse 1

DOCKET NUMBER: 50-346

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 906 MWe

REACTOR AGE: 0.6 yr

VENDOR: Babcock & Wilcox

ARCHITECT-ENGINEERS: Bechtel

OPERATORS: Toledo Edison

LOCATION: ~~21 miles east of~~ Toledo, Ohio

DURATION: 360(a) hours

PLANT OPERATING CONDITION: hot standby

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

DISCOVERY METHOD: During testing

COMMENT: —