

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 39380

Date: December 8, 1971

Title: Safety Valve Operation After Feedwater Transient at Dresden 3

The failure sequence was:

1. Loss of the 3C condensate booster pump initiated a feedwater transient.
2. The 3B feedwater pump auto-started and was used to recover water level.
3. The 3B feedwater regulating valve locked out in the open position and the flow on light failed to indicate this situation.
4. Within 2 minutes and 45 seconds the water level had reached the main steam-line causing a safety valve to actuate which resulted in pressurizing the drywell.
5. During the transient low power range monitor cabling, one electromatic relief valve solenoid operator and piping insulation were damaged.

Corrective action:

1. All damaged equipment was repaired or replaced.
2. The feedwater control system was recalibrated and the signals verified.
3. The air system was modified by installing a 10 ft³ accumulator.

Design purpose of failed system or component:

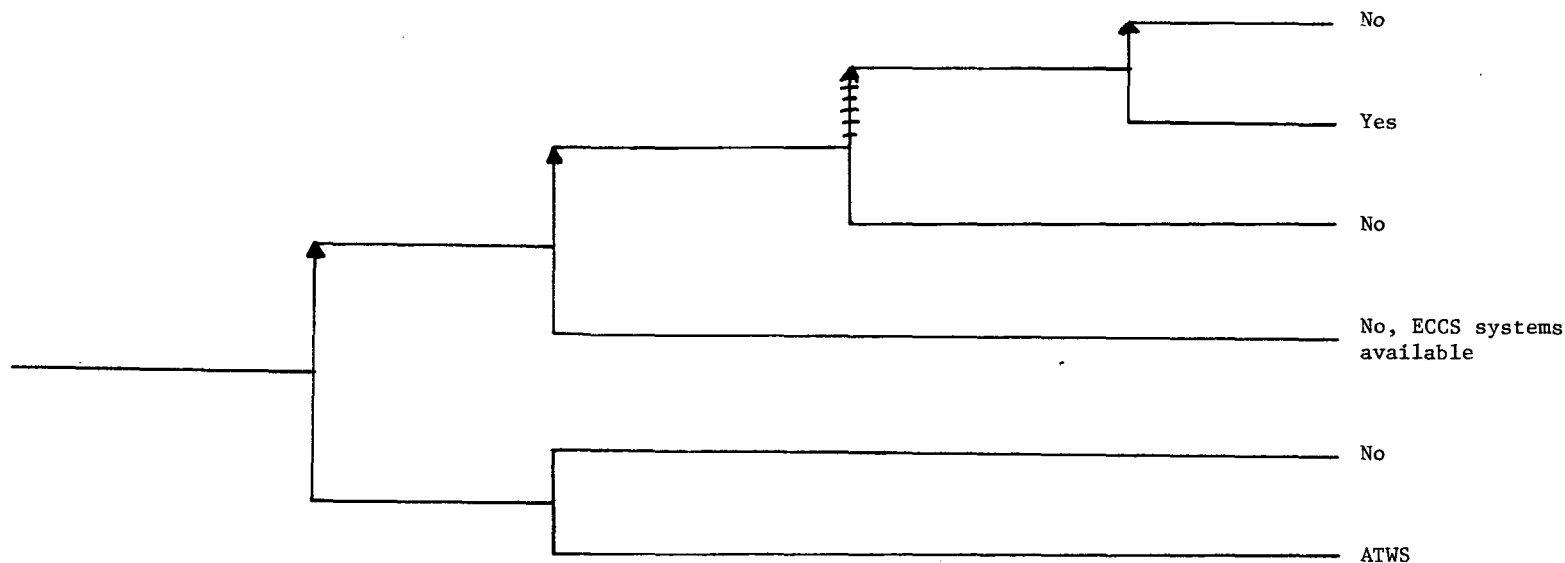
The feedwater regulating valve controls the amount of feedwater supplied to the reactor.

Unavailability of system per WASH 1400: * -

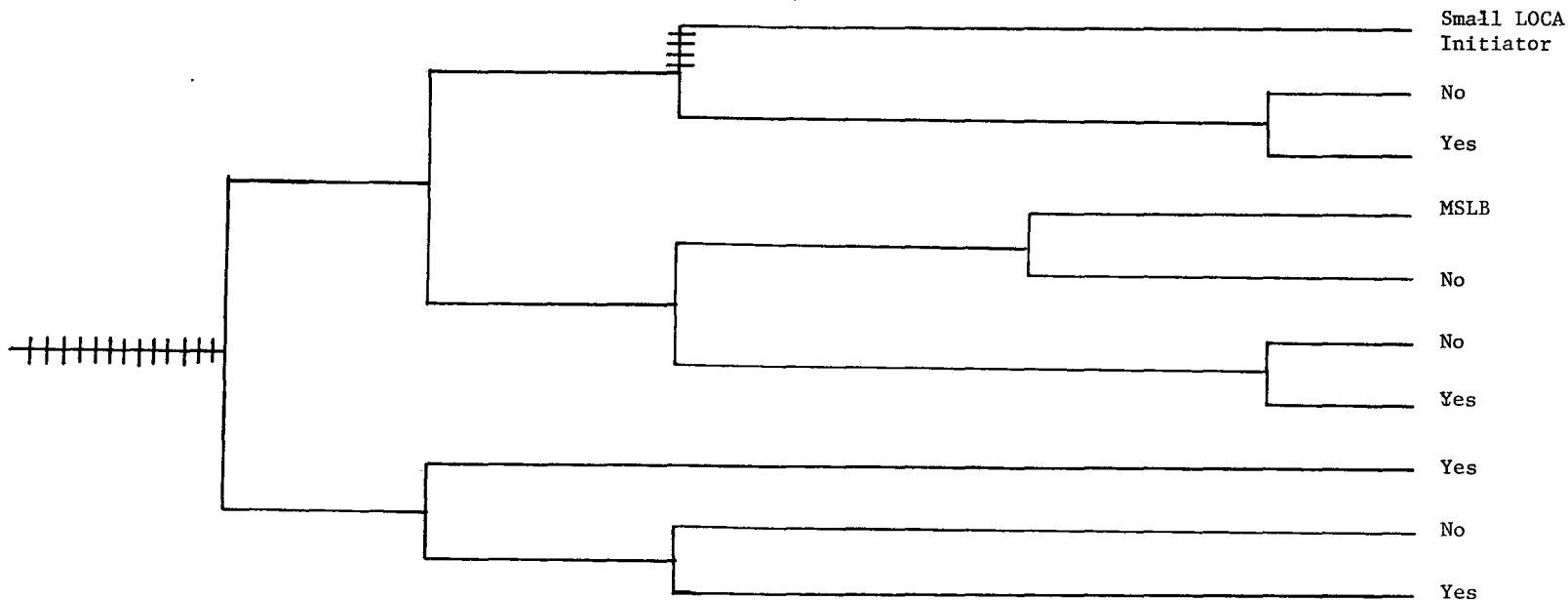
Unavailability of component per WASH 1400: * -

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

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| Condensate Booster Pump Trip Causes Of Feed-water Transient | A Turbine Trip/ Reactor Trip Occurs | The B Feedwater Pump Auto Starts And Supplies Coolant To The Reactor | The Regulator Valve Sticks Open And Overfills The Reactor Vessel. Water Blows Out The Relief Valve | The Plant Was Brought To A Safe Shutdown | Potential Severe Core Damage |
|---|-------------------------------------|--|--|--|------------------------------|



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|-----------------------------|---------------|-----------------------------------|---|--|--------------------------------|------------------------------|
| Excessive Coolant Inventory | Reactor Scram | Reactor Vessel Or Turbine Isolate | Reactor Coolant Overflows Into Steam Lines, Is Discharged Through Relief Valves, Which Stick Open | Steam Line Break Due To Turbine Missiles, etc. | Long Term Core Cooling Success | Potential Severe Core Damage |
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CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 39380

DATE OF LER: February 22, 1972

DATE OF EVENT: December 8, 1971

SYSTEM INVOLVED: Pressure Relief, Feedwater

COMPONENT INVOLVED: Feedwater Regulator Valve

CAUSE: A mechanical failure

SEQUENCE OF INTEREST: Excessive Coolant Inventory Transient

ACTUAL OCCURRENCE: Safety valve operation after feedwater transient

REACTOR NAME: Dresden 3

DOCKET NUMBER: 50-249

REACTOR TYPE: BWR

DESIGN ELECTRICAL RATING: 794 MWe

REACTOR AGE: 0.94 yr

VENDOR: General Electric

ARCHITECT-ENGINEERS: Sargent & Lundy

OPERATORS: Commonwealth Edison

LOCATION: Nine miles East of Morris, Ill.

DURATION: N/A

PLANT OPERATING CONDITION: 100% power

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

DISCOVERY METHOD: operational transient

COMMENT: