

NSIC Accession Number: 78418

Date: February 2, 1973

Title: Failure of Charging Pump Valves to Open After an Ice Storm at Maine Yankee

The failure sequence was:

1. During ECCS valve surveillance testing, the suction valve from the RWST to charging pump 14A failed to open due to ice on the valve stem, a result of an ice storm earlier in the day.
2. The suction valve from the RWST to charging pump 14B failed to open completely, also because of ice on the valve stem.

Corrective action:

The ice was removed from the valve stems and protective covers fabricated for the valves.

Design purpose of failed system or component:

The charging pump suction valves admit water from the RWST to the charging pumps during safeguards actuation, when pump suction flow is automatically switched from the volume control tank to the RWST.

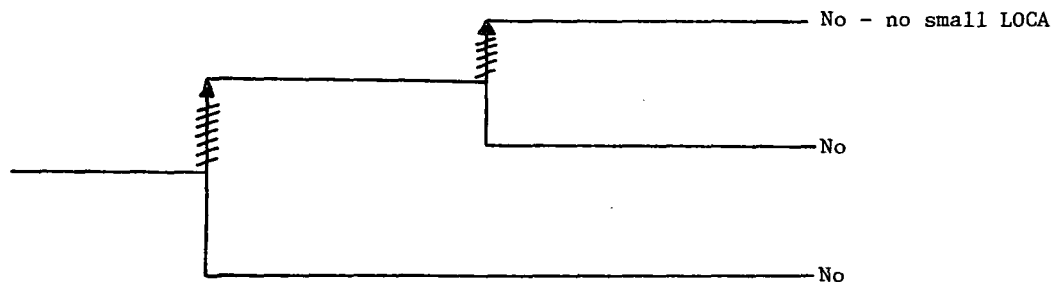
Unavailability of system per WASH 1400:\* High Pressure Injection System (Two of Three Pumps Required on Surry):  $1.2 \times 10^{-2}$

Unavailability of component per WASH 1400:\* Motor Operated Valve, failure to operate:  $1 \times 10^{-3}/D$

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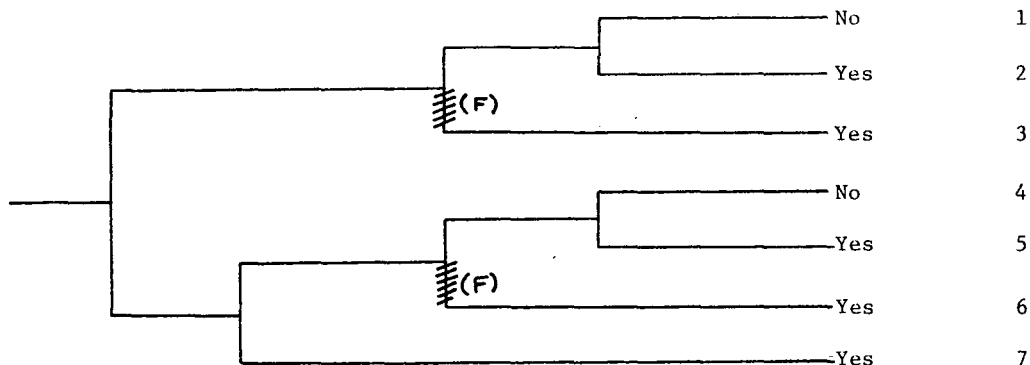
\* Unavailabilities are in units of per demand  $D^{-1}$ . Failure rates are in units of per hour  $HR^{-1}$ .

Reactor at 60% Power and Testing After an Ice Storm	Charging Pump 14A Suction Valve Fails to Open Due to Icing on Valve Stem	Charging Pump 14B Suction Valve Fails to Fully Open Due to Icing on Valve Stem	Potential Severe Core Damage
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NSIC 48418 - Actual Occurrence for Failure of Charging Pump Valves to Open After an Ice Storm at Maine Yankee

Small LOCA	Reactor Trip	Auxiliary Feedwater and Secondary Heat Removal	High Pressure Injection	Low Pressure Recirculation and LPR/HPI Cross-Connect	Potential Severe Core Damage	Sequence No.
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NSIC 78418 — Sequence of Interest for Failure of Charging Pump Valves to Open  
After an Ice Storm at Maine Yankee

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 78418

DATE OF LER: February 7, 1973

DATE OF EVENT: February 2, 1973

SYSTEM INVOLVED: High Pressure Injection System

COMPONENT INVOLVED: Charging pump suction valves.

CAUSE: Ice on valve stems

SEQUENCE OF INTEREST: small LOCA

ACTUAL OCCURRENCE: valve failure to open during testing

REACTOR NAME: Maine Yankee

DOCKET NUMBER: 50-309

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 825 MWe

REACTOR AGE: .3 yr

VENDOR: Combustion Engineering

ARCHITECT-ENGINEERS: Stone and Webster

OPERATORS: Maine Yankee Atomic Power Co.

LOCATION: 10 miles north of Bath, Maine

DURATION: 360(a) hours

PLANT OPERATING CONDITION: at 60% power

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

DISCOVERY METHOD: during testing

COMMENT: —