

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 135079

Date: December 8, 1977

Title: All Safety Injection Pumps Inoperable During Heatup at Robinson 2

The failure sequence was:

1. While the reactor was shut down, the SI pumps were tested and determined to be **operable**. The pump breakers were then racked out as required for over-pressure protection during cold shutdown.
2. During heatup (~4 hrs later) the pump breakers were not racked in, as required before going above 200°F due to a misunderstanding of the procedures.
3. This fact was discovered while completing a minimum equipment list and the breakers were racked in (five hours after they were required to be racked in).

Corrective action;

1. The breakers were racked in.
2. Operating procedures were revised as necessary to require the pumps to be in service before exceeding 200°F.

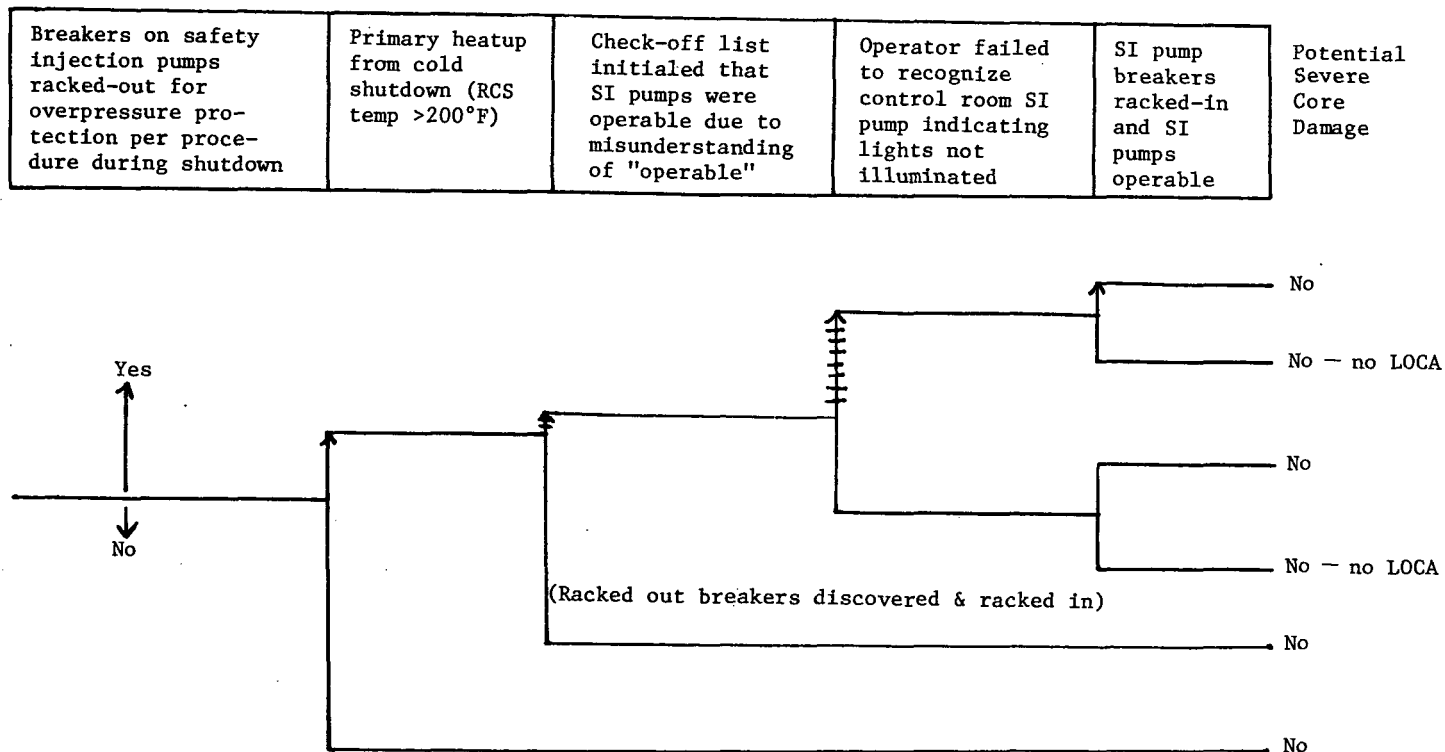
Design purpose of failed system or component:

1. The safety injection pumps provide high pressure injection of borated water in the event of a small LOCA.

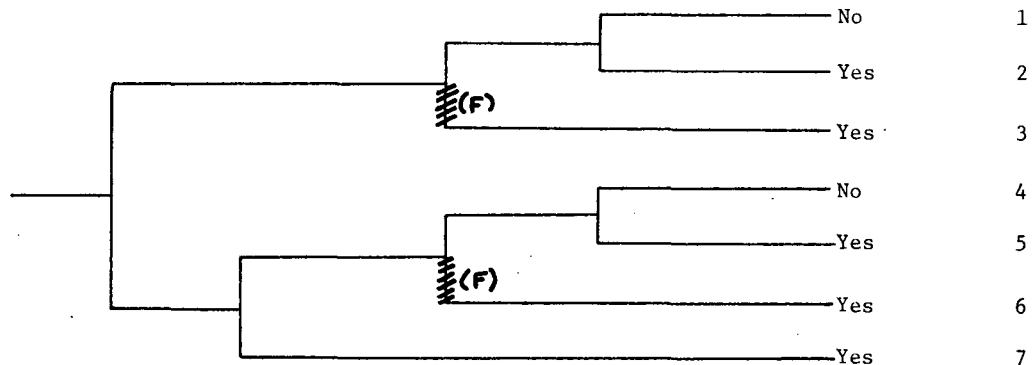
Unavailability of system per WASH 1400:* High Pressure Injection System:
 $1.2 \times 10^{-2}/D$

Unavailability of component per WASH 1400:* human error of omission: $3 \times 10^{-3}/D$

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



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 135079 — Sequence of Interest for Inoperable Safety Injection Pumps at Robinson 2

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 135079

DATE OF LER: December 8, 1977

DATE OF EVENT: November 23, 1977

SYSTEM INVOLVED: Safety injection

COMPONENT INVOLVED: Pumps, breakers

CAUSE: Breakers incorrectly racked out, human error

SEQUENCE OF INTEREST Small LOCA

ACTUAL OCCURRENCE: Misunderstanding of procedures during a heatup, the pump breakers were not racked in prior to exceeding 200°F.

REACTOR NAME: Robinson 2

DOCKET NUMBER: 50-261

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 700 MWe

REACTOR AGE: 7.3 yr

VENDOR: Westinghouse

ARCHITECT-ENGINEERS: Ebasco

OPERATORS: Carolina Power & Light Co.

LOCATION: 5 miles NW of Hartsville, SC

DURATION: 5 hours

PLANT OPERATING CONDITION: Hot shutdown

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

DISCOVERY METHOD: While completing a minimum equipment list

COMMENT: The fact that the pumps were not in service was indicated by a lack of pump status lights on the control board. The operators did not notice that the lights were out.