

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 103002

Date: April 29, 1975

Title: Multiple Valve Failures and RCIC Inoperable at Brunswick 2

The failure sequence was:

1. The reactor was operating at 10% power and RCIC was inoperable.
2. The "B" safety valve stuck open. (reason unspecified)
3. The operator failed to scram the reactor as specified by emergency procedures.
4. HPCI manually initiated but was shutdown due to high level in the torus. (This was done to prevent torus water from entering the core following expected HPCI suction switchover to torus on high torus level.
5. Reactor autoscam as MSIV's were manually closed to conserve reactor water.
6. An attempt was made to place the "B" RHR loop in service to cool the torus during the relief valve blowdown, however this failed. The service water supply valve to the RHR heat exchanger failed to open.

Corrective action:

All relief valves except the "A" relief valves were removed, overhauled, and reinstalled. The "A" valve had just been overhauled and was operating correctly.

Design purpose of failed system or component:

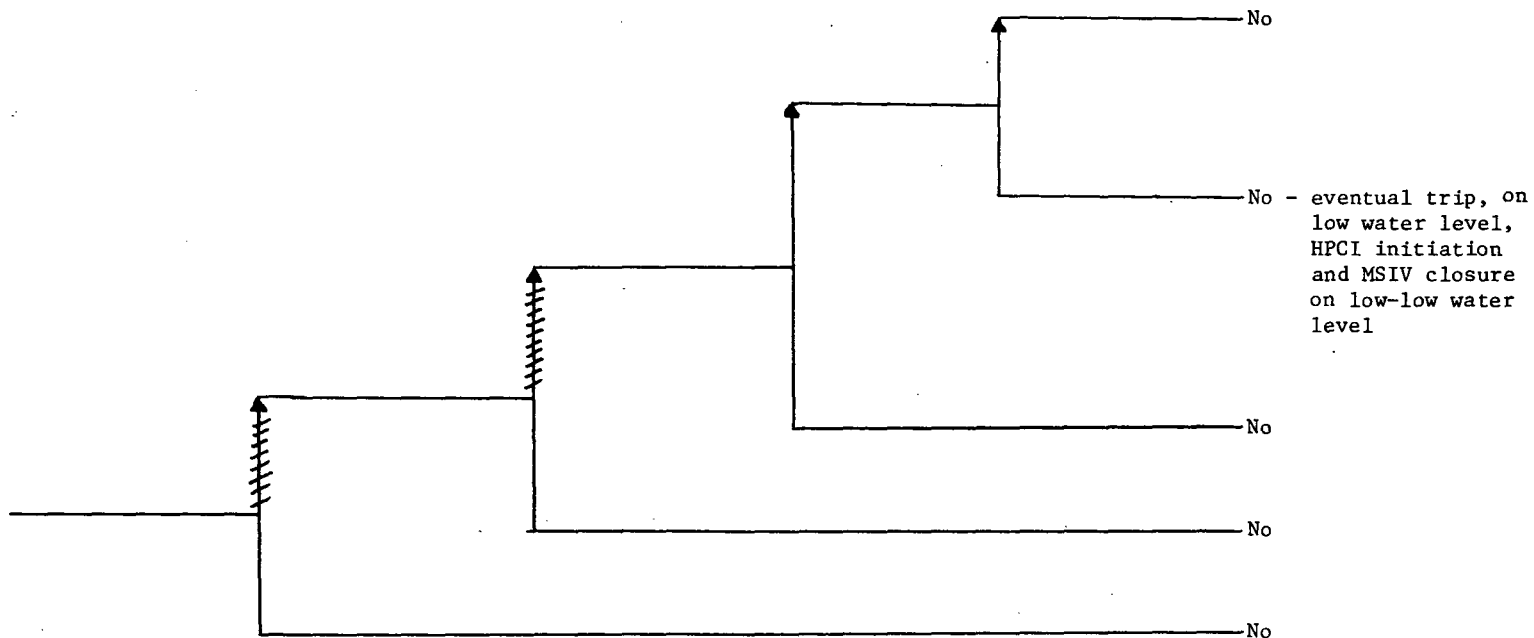
1. RCIC provides for core cooling when feedwater is unavailable.
2. RHR provides for long term core cooling.
3. The relief valves provide for a controlled depressurization of the reactor.

Unavailability of system per WASH 1400:* RCIC: $8 \times 10^{-2}/D$

Unavailability of component per WASH 1400:* RHR valve (SOV): $1 \times 10^{-3}/D$
relief valve, failure to close: $1 \times 10^{-2}/D$

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

Reactor operating at 10% power and RCIC unavailable	Operator realizes the "B" safety valve is stuck open	Operator fails to manually scram the reactor	HPCI manually initiated, but shutdown due to high torus level	Operator closes MSIV's which initiates scram	Potential Severe Core Damage
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CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 103002

DATE OF LER: May 16, 1975

DATE OF EVENT: April 29, 1975

SYSTEM INVOLVED: RCIC, RHR, Reactor coolant system (RCS)

COMPONENT INVOLVED: isolation & relief valves

CAUSE: mechanical failure of the valve pilot, operator error

SEQUENCE OF INTEREST: loss of feedwater flow

ACTUAL OCCURRENCE: multiple valve failures and RCIC inoperable at Brunswick 2

REACTOR NAME: Brunswick 2

DOCKET NUMBER: 50-324

REACTOR TYPE: BWR

DESIGN ELECTRICAL RATING: 821 MWe

REACTOR AGE: .1 yr

VENDOR: GE

ARCHITECT-ENGINEERS: United Engineers & Constructors

OPERATORS: Carolina Power & Light

LOCATION: 3 miles N of Southport, NC

DURATION: N/A

PLANT OPERATING CONDITION: 10% power

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

DISCOVERY METHOD: Operational event

COMMENT: -