PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 120995

Date: November 11, 1976

Title: Suction Valves to Decay Heat Pumps Fail to Open at Rancho Seco

The failure sequence was:

1. During testing, neither sump isolation valve opened when an open signal was applied.

Corrective action;

1. The valves were moved manually and then cycled electrically. The bypass switches for the valve torque switches was adjusted to permit more motor turns before the bypass switches dropped out.

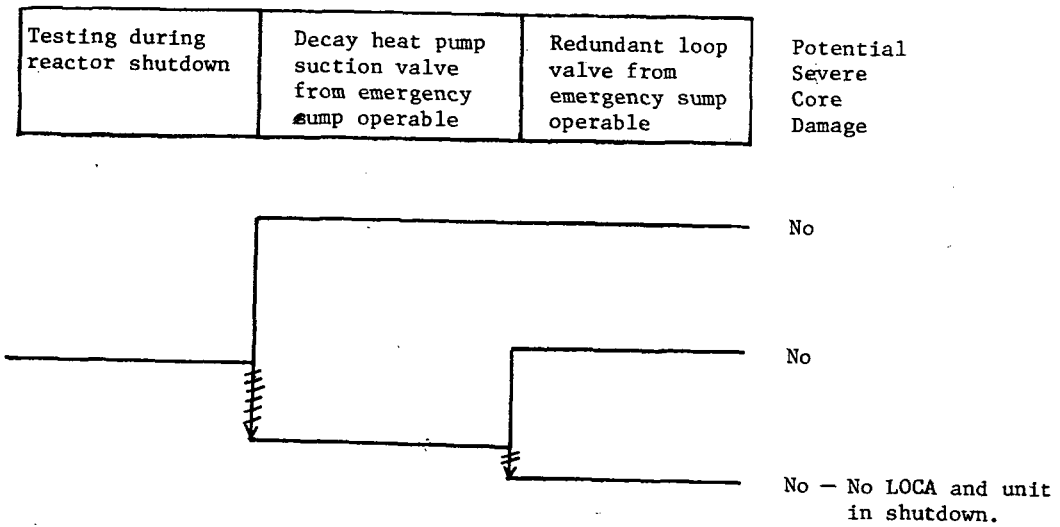
Design purpose of failed system or component:

1. The valves provide for fluid flow from the sump to the low pressure and high pressure recirculation systems and the building spray system (while in the recirculation mode) following a LOCA.

Unavailability of system per WASH 1400:* low pressure recirc: $1.3 \times 10^{-2}/D$
high pressure recirc: $9 \times 10^{-3}/D$

Unavailability of component per WASH 1400:* motor operated valve, failure to operate. $1 \times 10^{-3}/D$

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



NSIC 120995 — Actual Occurrence for Failure of Both Suction Valves to Decay Heat Pumps from Emergency Sump at Rancho Seco

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.
					No	1
				(F)	Yes	2
					Yes	3
					No	4
				(F)	Yes	5
					Yes	6
					Yes	7

NSIC 120995 — Sequence of Interest for Both Sump Suction Valves to Decay Heat Pumps Fail to Open at Rancho Seco

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 120995

DATE OF LER: November 22, 1976

DATE OF EVENT: November 11, 1976

SYSTEM INVOLVED: Decay heat

COMPONENT INVOLVED: Pumps

CAUSE: Switch setting incorrect.

SEQUENCE OF INTEREST: LOCA

ACTUAL OCCURRENCE: Valves fail to open for decay heat system.

REACTOR NAME: Rancho Seco

DOCKET NUMBER: 50-312

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 918 MWe

REACTOR AGE: 2.1 yr

VENDOR: B&W

ARCHITECT-ENGINEERS: Bechtel

OPERATORS: Sacramento Municipal Utility District

LOCATION: 25 miles SE of Sacramento, CA

DURATION: 360(a) hours

PLANT OPERATING CONDITION: Shut down.

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

DISCOVERY METHOD: During test.

COMMENT: Bypass switches for torque switches were dropping out before valve disc cleared seat resulting in torque switch stopping valve movement.