

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 106616

Date: September 13, 1975

Title: Loss of Offsite Power and a Relief Valve Sticks Open at Pilgrim 1

The failure sequence was:

1. The reactor was undergoing a routine shutdown when a turbine trip occurred (no reason was given for the turbine trip). This caused the startup and auxiliary 345 kv fuses to de-energize (again reason unspecified resulting in a loop). and the reactor to trip.
2. The diesel generators started and re-energized the safety related buses.
3. A relief valve (203-2B) opened for pressure control.
4. This valve stuck open until the reactor pressure fell to approximately 300 psig. The failure was attributed to steam cutting the pilot valve assembly, which increased the pressure on the actuating side of the second stage piston, thereby reducing the closing forces on this piston.

Corrective action:

Corrective action was not discussed in the LER.

Design purpose of failed system or component:

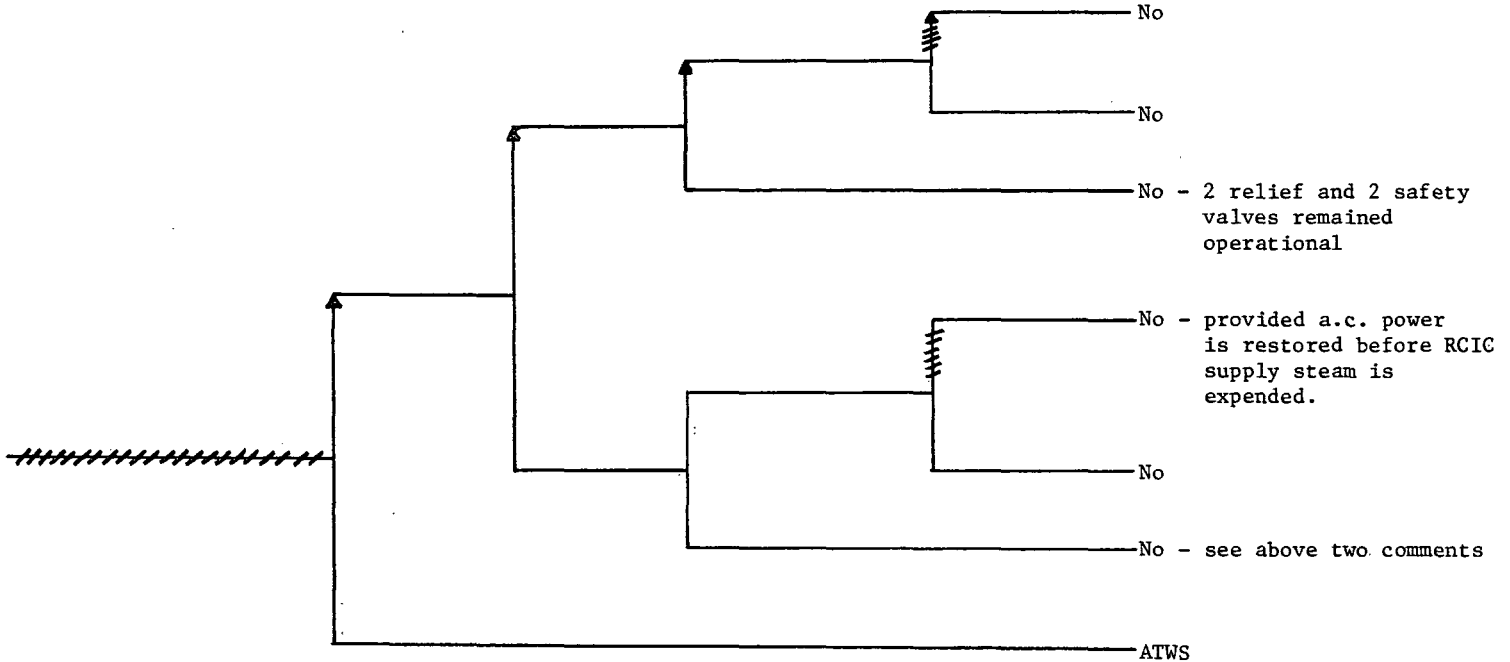
1. The startup buses provide station power when the unit is not generating power.
2. Relief valves provide for pressure control.

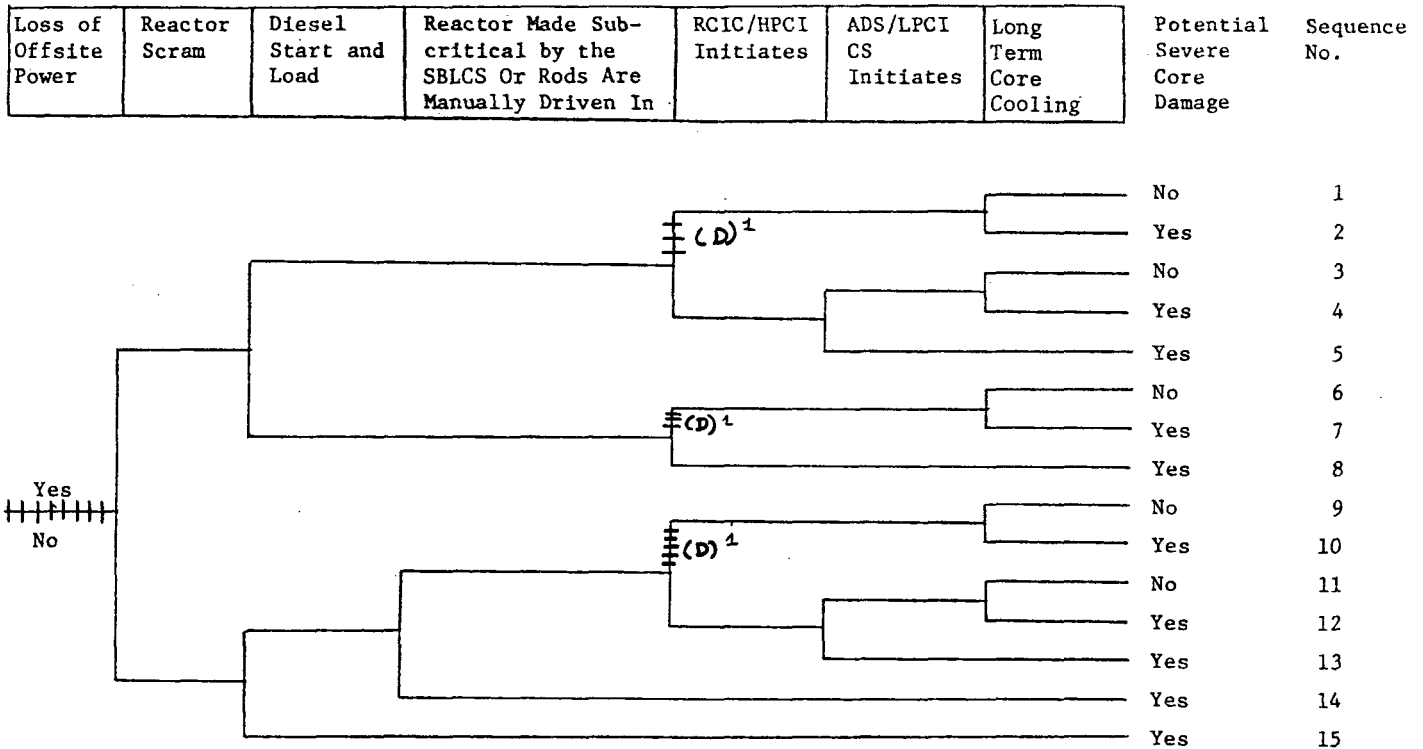
Unavailability of system per WASH 1400:* Loop: $10^{-3}/D$ following trip.

Unavailability of component per WASH 1400:* PORV failure to close: $10^{-2}/D$

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

As the reactor was experiencing a shutdown, a turbine trip occurred which caused the start-up and auxiliary buses to trip	The reactor scrambled	The diesel generators started and loaded	A relief valve opened for pressure control	The relief valve failed to reseat	Potential Severe Core Damage
---	-----------------------	--	--	-----------------------------------	------------------------------





NSIC 106616 — Sequence of Interest for Loss of Offsite Power and a Relief Valve Sticks Open at Pilgrim 1
 1 A relief valve stuck open.

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 106616

DATE OF LER: September 14, 1975

DATE OF EVENT: September 13, 1975

SYSTEM INVOLVED: electric power, reactor pressure relief system

COMPONENT INVOLVED: startup and auxiliary transfers, relief valve

CAUSE: turbine trip (electric), mechanical failure (relief valve)

SEQUENCE OF INTEREST: loss of offsite power

ACTUAL OCCURRENCE: loss of offsite power and a relief valve sticks open at Pilgrim 1

REACTOR NAME: Pilgrim 1

DOCKET NUMBER: 50-293

REACTOR TYPE: BWR

DESIGN ELECTRICAL RATING: 655 MWe

REACTOR AGE: 3.3 yr

VENDOR: General Electric

ARCHITECT-ENGINEERS: Bechtel

OPERATORS: Boston Edison

LOCATION: 4 miles SE of Plymouth, Mass.

DURATION: N/A

PLANT OPERATING CONDITION: undergoing a routine shutdown

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

DISCOVERY METHOD: operational event

COMMENT: -