

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 150943

Date: July 27, 1979

Title: Reactor Scram From Loss of Offsite Power at Pilgrim 1

The failure sequence was:

1. The reactor was operating at 100% when lightning struck the offsite transmission lines.
2. This caused backflashing which resulted in a high speed relay operation for a line to ground fault.
3. The reactor tripped.
4. The diesel generators started and loaded properly.
5. Relief/Safety valve 203-3D was manually actuated to control pressure.

Corrective action:

1. Offsite power was restored in $\approx 1\frac{1}{2}$ hours.

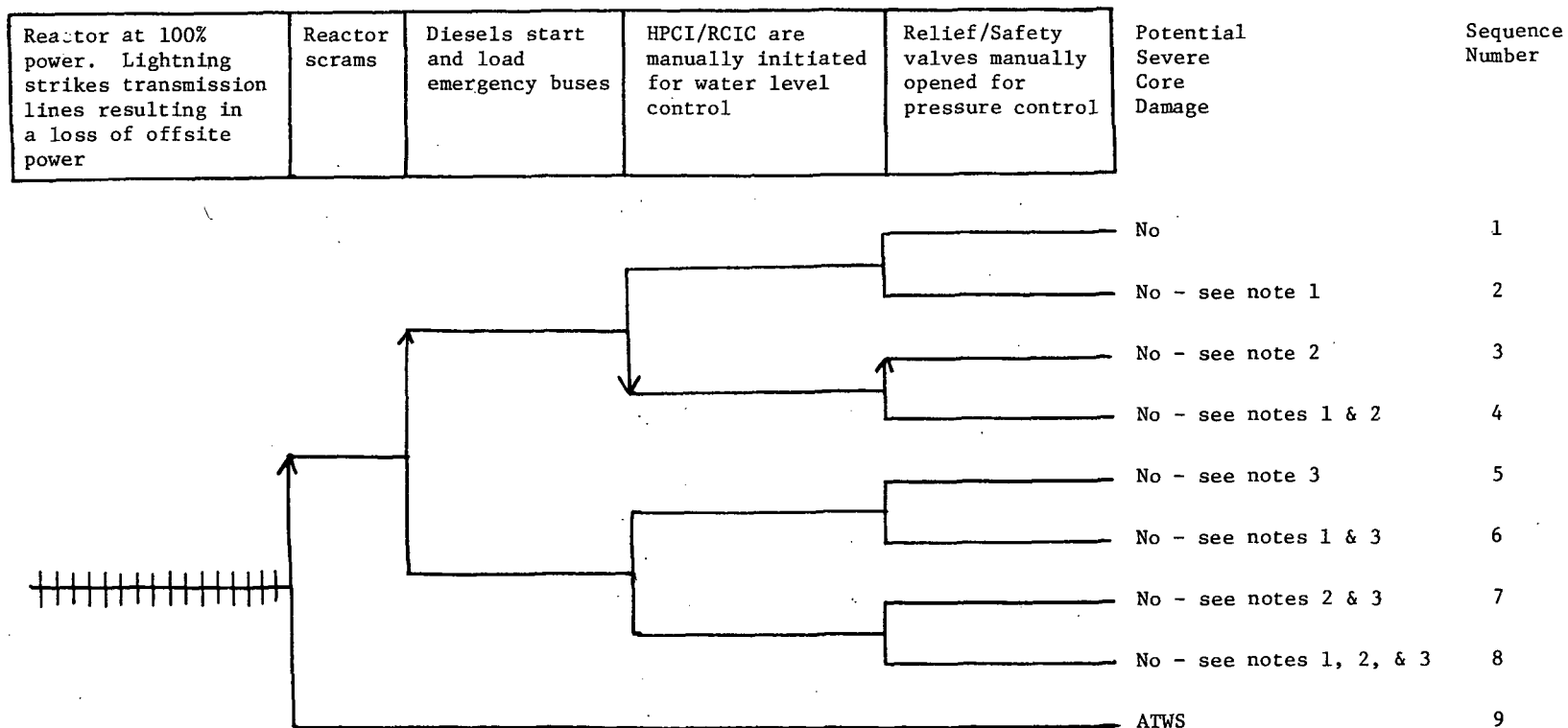
Design purpose of failed system or component:

The transmission lines tie Pilgrim 1 to the New England grid. These lines are a source of power when the unit isn't generating power.

Unavailability of system per WASH 1400:* loss of offsite power $2.0 \times 10^{-5}/\text{hrs}$

Unavailability of component per WASH 1400:* -

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

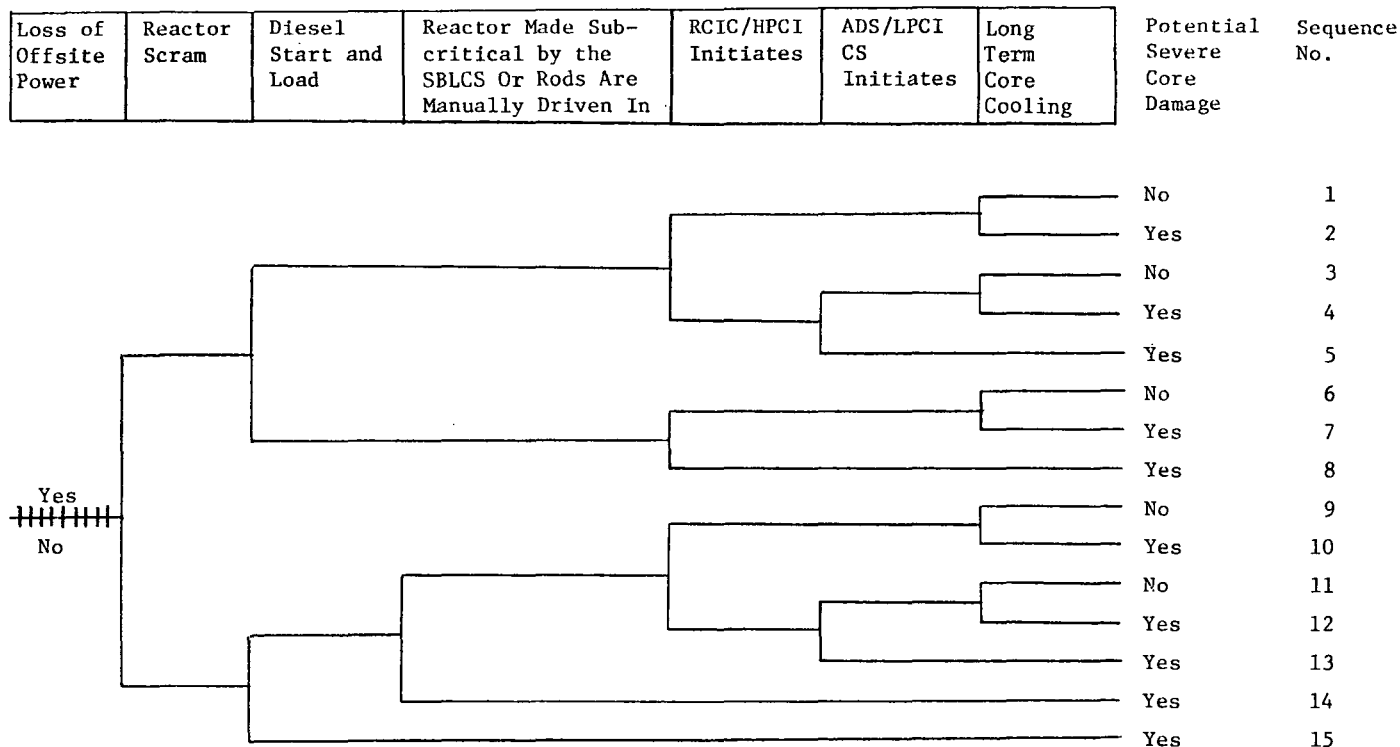


Notes

1. The safety and safety/relief valves automatically opened at the following set points:

	No. of Valves	Set Pressure (PSIG)
Relief valves	3	1090 to 1100
Safety valves	2	1240

2. The HPCI and the RCIC autoactuate at either low-low reactor water inventory or high dry well pressure. See note 1.
3. The HPCI and RCIC are capable of initiation without an a.c. power source. The safety and relief valves also have this capability. The battery system is capable of 8 hours at 77°F operation without recharge. Since offsite power was restored within $\sim 1\frac{1}{2}$ hour, a potential core damage situation did not exist.



CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 150943

DATE OF LER: August 10, 1979

DATE OF EVENT: July 27, 1979

SYSTEM INVOLVED: electric power

COMPONENT INVOLVED: grounding relays

CAUSE: lightning struck offsite transmission lines causing high speed relay operation for line to ground fault.

SEQUENCE OF INTEREST: loss of offsite power

ACTUAL OCCURRENCE: loss of offsite power

REACTOR NAME: Pilgrim 1

DOCKET NUMBER: 50-293

REACTOR TYPE: BWR

DESIGN ELECTRICAL RATING: 655 MWe

REACTOR AGE: 7.1 yr

VENDOR: GE

ARCHITECT-ENGINEERS: Bechtel

OPERATORS: Boston Edison

LOCATION: 4 miles SE of Plymouth

DURATION: N/A

PLANT OPERATING CONDITION: 100% power

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

DISCOVERY METHOD: operational event

COMMENT: ~