

NSIC Accession Number: 151635

Date: August 18, 1979

Title: All Offsite Power Lost at Pilgrim 1

The failure sequence was:

1. Pilgrim 1 was operating at 100% power when lightning struck the switchyard causing a ground fault. This resulted in a total loss of offsite power.
2. The reactor tripped due to the load rejection.
3. The diesels started and loaded the vital buses.
4. A relief valve was manually opened for pressure control.
5. The reactor was brought to a safe shutdown.

Corrective action:

1. Offsite power was returned to the station in $\sim 1/2$ hour.

Design purpose of failed system or component:

Offsite power is the source of electricity to both safety and non-safety related loads when the reactor is shutdown.

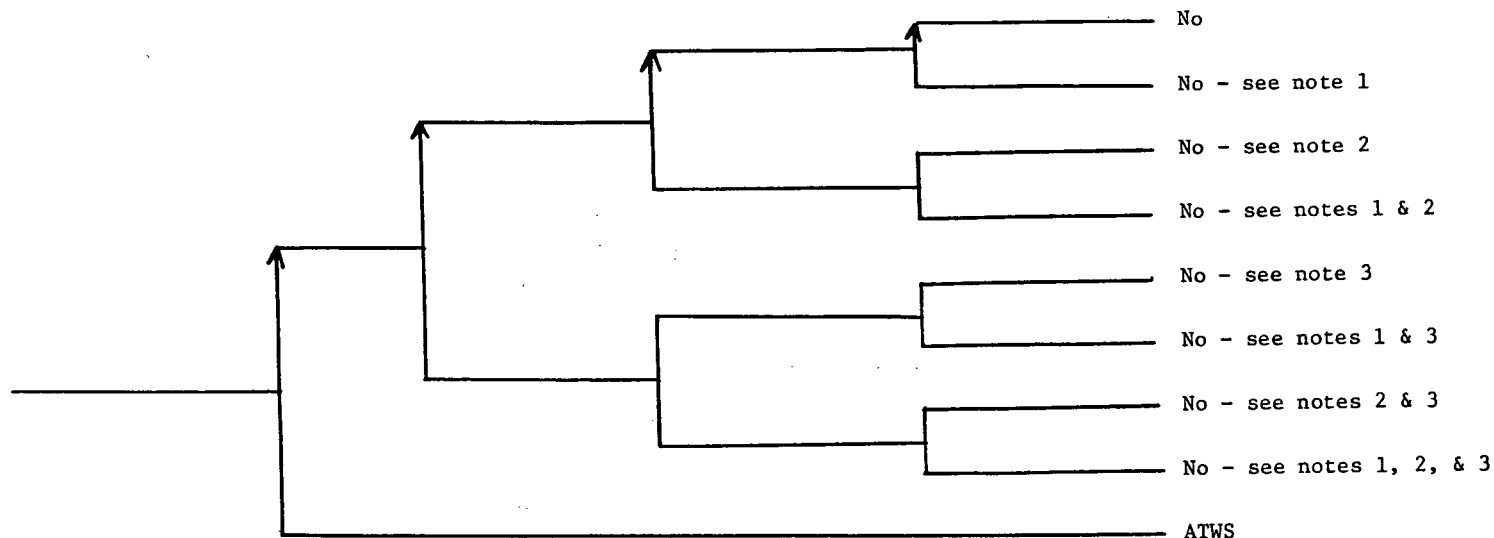
Unavailability of system per WASH 1400:* $\text{loss of offsite power: } 2 \times 10^{-5}/\text{hr}$

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} .

Reactor at 100% power. Lightning strikes switchyard resulting in a loss of offsite power	Reactor scrams	Diesels start and load emergency buses	HPCI/RCIC are manually initiated for water level control ¹	Relief/Safety valves manually opened for pressure control
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Potential
Severe
Core
Damage



NSIC 151635 -- Actual Occurrence of the Loss of Offsite Power at Pilgrim 1

¹

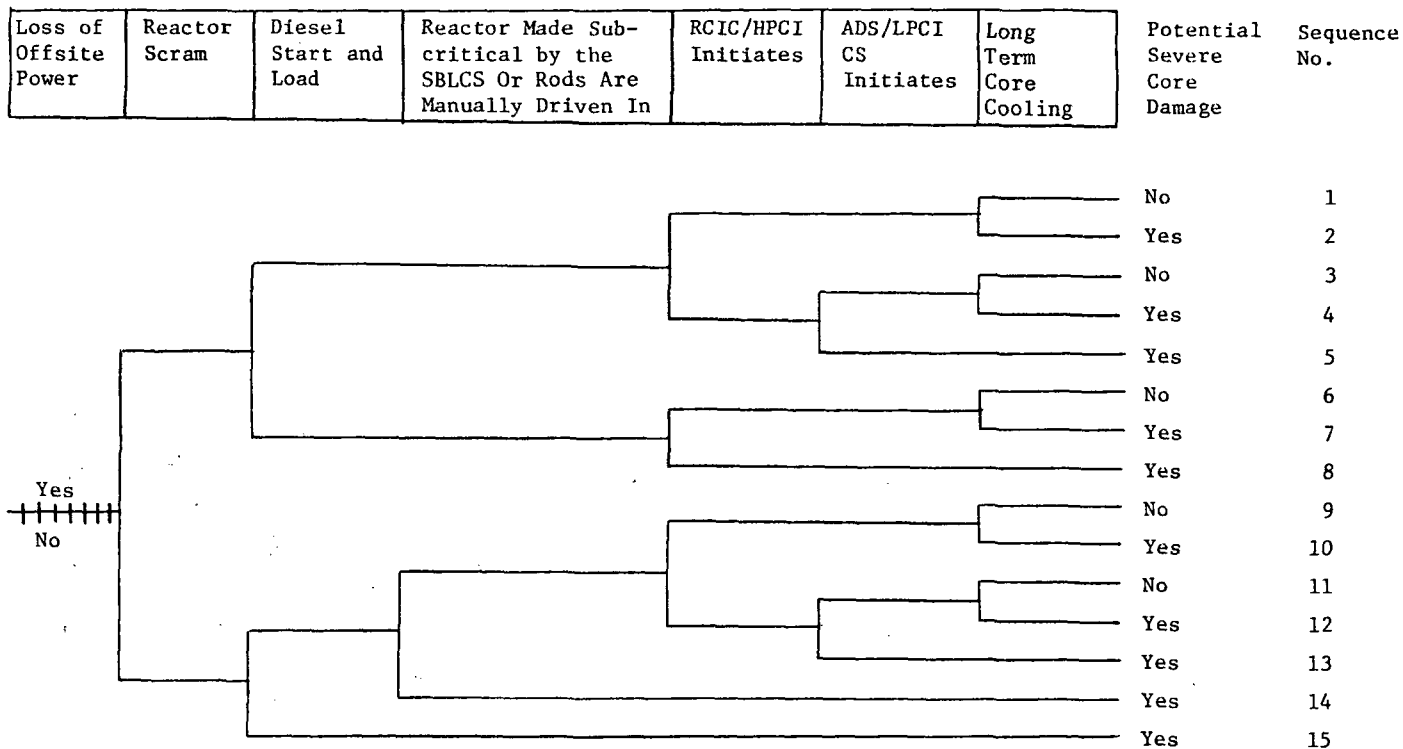
This action is presumed.

Notes

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

	No. of Valves	Set Pressure (PSIG)
Relief valves	3	1090 to 1240
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 systems are capable of 8 hour operation without recharge. Since offsite power was restored within $\frac{1}{2}$ hour, a potential core damage situation did not exist.



NSIC 151635 — Sequence of Interest for the Loss of Offsite Power at Pilgrim 1

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 151635

DATE OF LER: September 11, 1978

DATE OF EVENT: August 28, 1979

SYSTEM INVOLVED: electric power

COMPONENT INVOLVED: switchgear

CAUSE: lightning

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: 7.2 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: Third loop occurrence at Pilgrim.