

NSIC Accession Number: 140140

Date: August 6, 1978

Title: Loss of Offsite Power at Pilgrim 1

The failure sequence was:

1. The reactor was operating at 100% full power when lightning struck offsite distribution lines. This caused a ground fault in the high speed relays. This resulted in a loss of offsite power.
2. The reactor scrambled automatically.
3. The diesels started and loaded.
4. The RCIC/HPCI were manually started to maintain a proper water level.
5. Safety/relief valve 203-C was opened once for pressure control.

Corrective action:

1. Offsite power was returned to the startup transformers within 1/2 hour.

Design purpose of failed system or component:

The transmission lines connect Pilgrim 1 with the New England Grid.

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

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} .

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.

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 140140

DATE OF LER: August 8, 1978

DATE OF EVENT: August 6, 1978

SYSTEM INVOLVED: electric power

COMPONENT INVOLVED: grounding relays

CAUSE: lightning striking offsite transmission line caused high speed relay operation for line to ground faults.

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: 6.2 yr

VENDOR: GE

ARCHITECT-ENGINEERS: Bechtel

OPERATORS: Boston Edison

LOCATION: 4 miles SE of Plymouth, Mass.

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: -