

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 125563

Date: May 16, 1977

Title: Offsite Power Lost at St. Lucie 1

The failure sequence was:

1. Fifteen minutes after a manual reactor trip due to grid disturbances, a system undervoltage condition occurred which caused the reactor coolant pumps to trip.
2. Both diesel-generators started and loaded.
3. The reactor was cooled down using natural circulation until off-site power was restored (approximately 20 minutes).
4. One hour later, off-site power was again lost and natural circulation cool-down was used until off-site power was restored (one to one-and-a-half hours later).

Corrective action;

None

Design purpose of failed system or component:

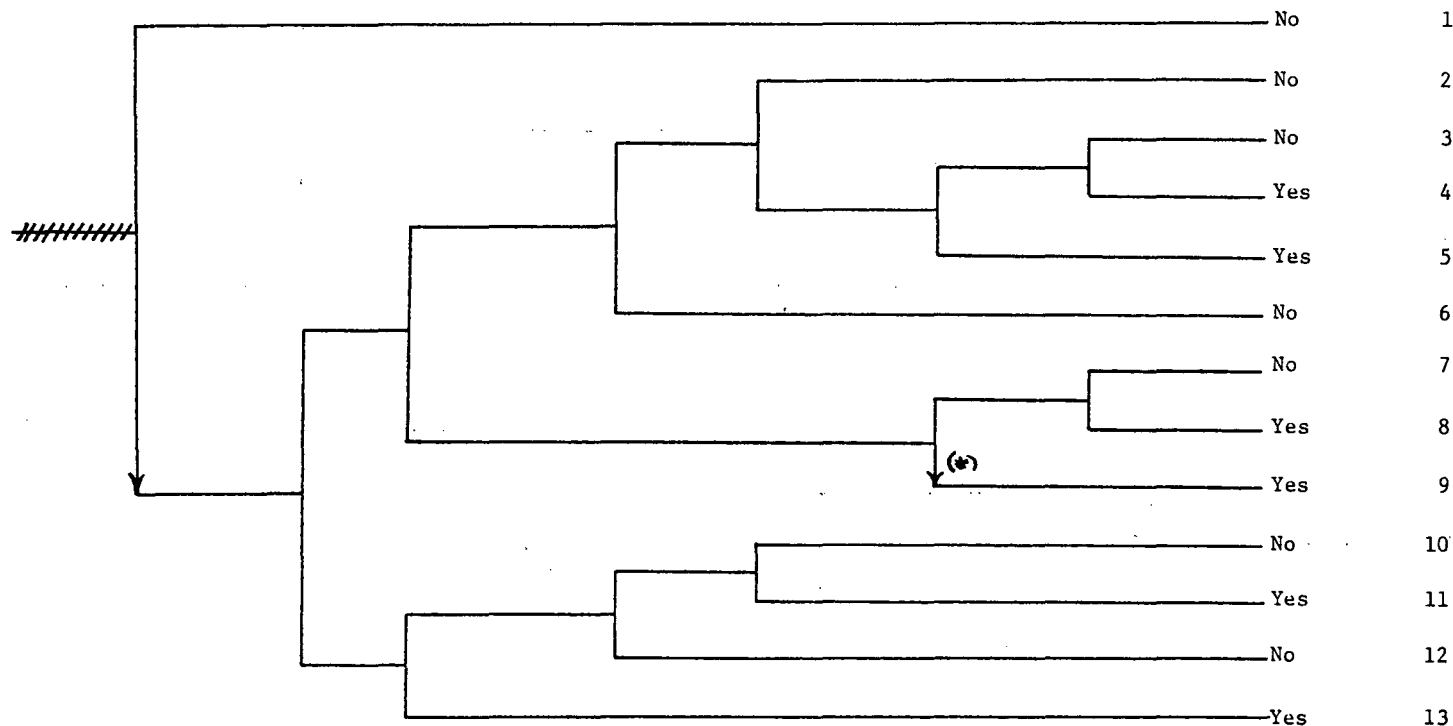
1. Off-site power provides the preferred source of electric power to safety-related equipment when the unit generator is not in operation.

Unavailability of system per WASH 1400:* 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} .

Loss of Offsite Power	Turbine Generator Runs Back and Assumes House Loads	Emergency Power	Auxiliary Feedwater and Secondary Heat Removal	PORV Demanded	PORV or PORV Isolation Valve Closure	High Pressure Injection	Long Term Core Cooling	Potential Severe Core Damage	Sequence No.
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NSIC 125563 — Sequence of Interest for Off-Site Power Lost at St. Lucie 1

* not included in mitigation procedures.

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 125563

DATE OF LER: June 16, 1977

DATE OF EVENT: May 16, 1977

SYSTEM INVOLVED: off-site power

COMPONENT INVOLVED: unknown

CAUSE: unknown

SEQUENCE OF INTEREST: loss of offsite power

ACTUAL OCCURRENCE: reactor trip with loss of offsite power

REACTOR NAME: St. Lucie 1

DOCKET NUMBER: 50-335

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 802 MWe

REACTOR AGE: 1.1 yr

VENDOR: Combustion Engineering

ARCHITECT-ENGINEERS: Ebasco

OPERATORS: Florida Power & Light Co.

LOCATION: 12 miles SE of Fort Pierce, Fla.

DURATION: N/A

PLANT OPERATING CONDITION: tripped prior to loss of off-site power

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

DISCOVERY METHOD: during operation

COMMENT: LER does not specify which AFW system components were used to provide core cooling.