

# PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 139565

Date: May 14, 1978

Title: Off-site Power Lost at St. Lucie 1

The failure sequence was:

1. With the reactor shut down for refueling, improper switching at one substation and improper connection of both 240 KV/138 KV autotransformer polarizing current transformer circuits at another substation resulted in a total loss of off-site power.
2. One diesel-generator was inoperative because of maintenance.
3. The second diesel-generator started and assumed safety-related loads until off-site power was restored.

Corrective action;

1. The improper polarization of circuits at the one substation was corrected.

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 off-site power:  $2 \times 10^{-5}/\text{hr}$

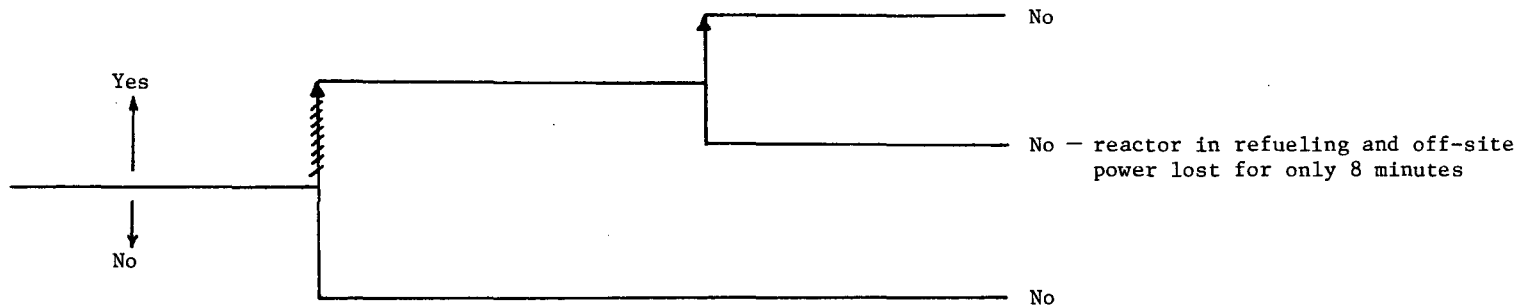
Unavailability of component per WASH 1400:\* diesel generator:  $3 \times 10^{-2}/\text{D}$

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

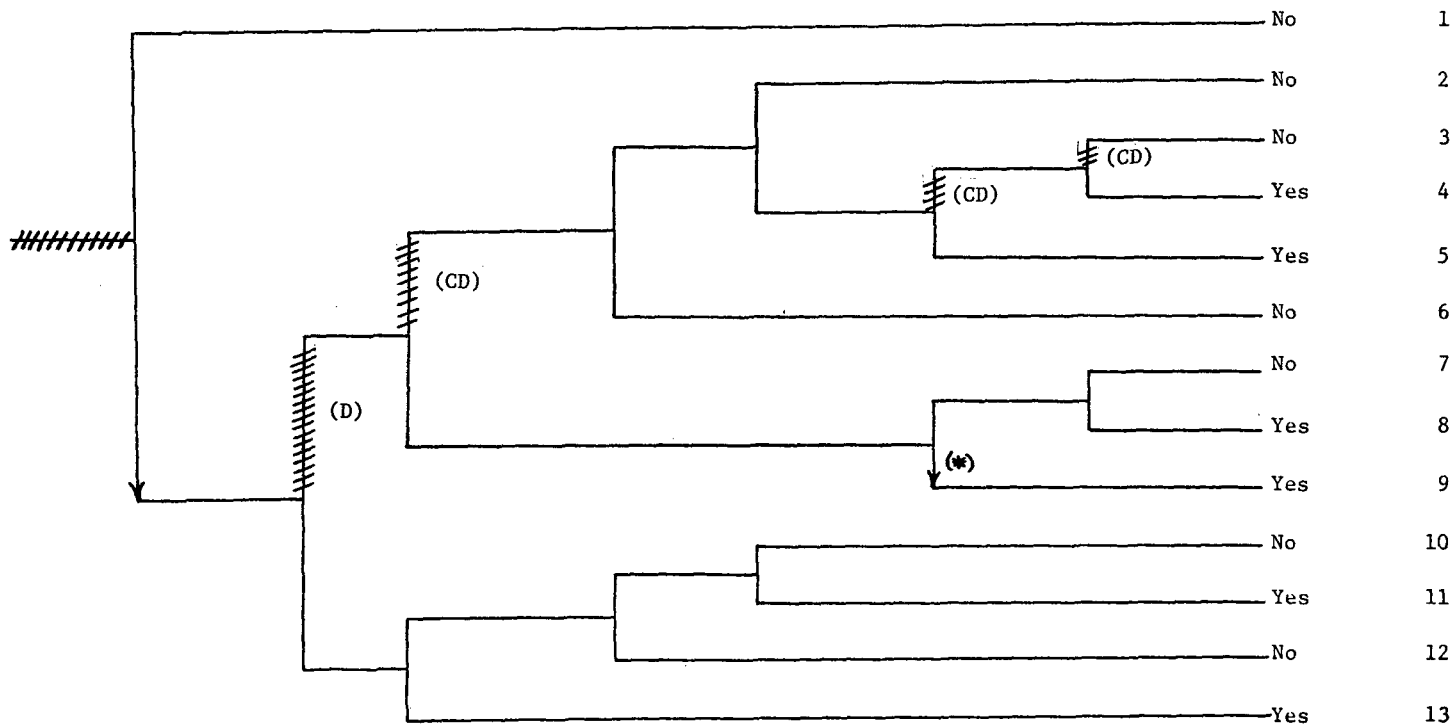
Reactor shut down for refueling and one diesel-generator down for maintenance	Switching errors at one substation and improper connection of both 240 KV/138 KV autotransformer polarizing current transformer circuits at another substation result in a total loss of offsite power	Operable diesel-generator starts and safety-related loads
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Potential  
Severe  
Core  
Damage



NSIC 139565 - Actual Occurrence for Offsite Power Lost at St. Lucie 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 139565 - Sequence of Interest for Offsite Power Lost at St. Lucie 1

\* Not included in mitigation procedures.

# CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 139565

DATE OF LER: June 13, 1978

DATE OF EVENT: May 14, 1978

SYSTEM INVOLVED: off-site power

COMPONENT INVOLVED: switchyard switches and polarizing current transformer circuits

CAUSE: switching error and installation error, human error

SEQUENCE OF INTEREST: loss of offsite power with reactor trip

ACTUAL OCCURRENCE: loss of offsite power during refueling

REACTOR NAME: St. Lucie 1

DOCKET NUMBER: 50-335

REACTOR TYPE: PWR

DESIGN ELECTRICAL RATING: 802 MWe

REACTOR AGE: 2.1 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: refueling

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

DISCOVERY METHOD: during operational event

COMMENT: -