

PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 166384

Date: May 22, 1981

Title: LOOP at Monticello

The failure sequence was:

1. During a refueling outage an energized 4.16 kV breaker was racked out under load due to an operator error.
2. The resulting flashover created an electrical fault on No. 16 4.16 kV essential bus.
3. The No. 16 bus fault was picked up by the undervoltage relays on the 1R transformer, which then tripped off before the overcurrent relays on bus No. 16 could trip off.
4. Sensing of the undervoltage condition on the 1R transformer actuated automatic isolation of the entire 4.16 kV distribution system from the power source.
5. A momentary loss of all 4.16 kV busses occurred.
6. The No. 1AR transformer and the No. 12 diesel generator closed into the faulted bus and subsequently tripped due to undervoltage and overcurrent, respectively.
7. The No. 11 diesel generator came on line and successfully supplied power to the No. 15 4.16 kV essential bus.

Corrective action:

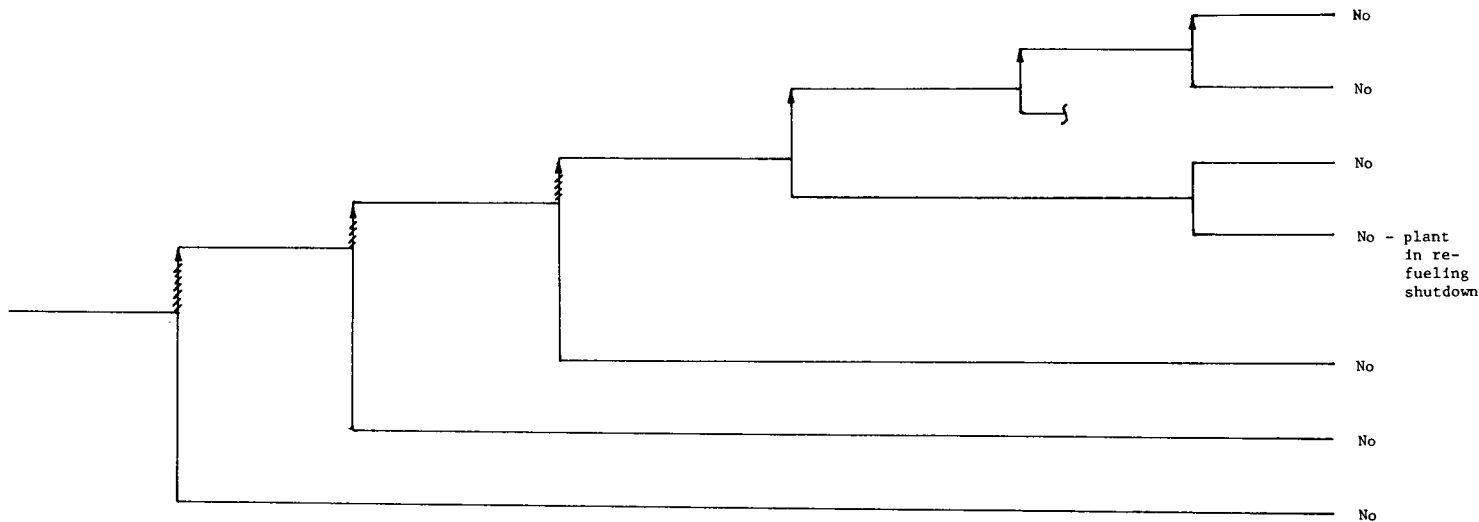
1. Operator action restored the unfaulted 4.16 kV buses to service by returning transformer 1R to service.
2. The faulted essential bus and damaged breaker were isolated.
3. Operator retraining program was revised to include proper breaker operations.

Design purpose of failed system or component:

Offsite power provides the preferred source of power to safety-related loads when the unit generator is not operating.

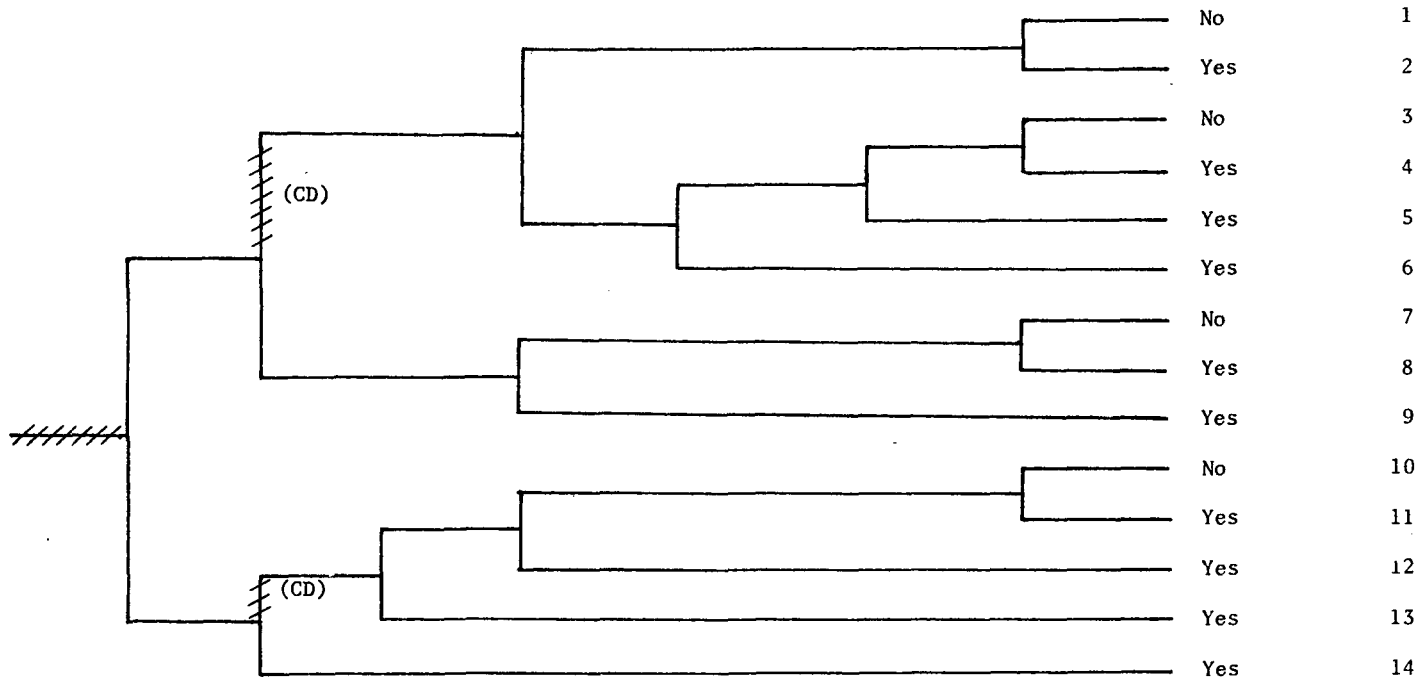
Reactor shutdown for refueling	An energized 4.16-kV breaker is racked out under load	Resulting flash-over creates fault on No. 16 4.16-kV bus	No. 1R transformer undervoltage relays trip prior to No. 16 bus overcurrent relays, resulting in loss of power to all 4.16-kV buses	No. 1AR transformer and No. 12 diesel generator close in to faulted bus	No. 1AR transformer and No. 12 DG trip	No. 11 DG provides essential power to No. 15 bus
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Potential Severe Core Damage



NSIC 166384 - Actual Occurrence for LOOP at Monticello

Loss of Offsite Power	Reactor Scram	Diesel Start and Load	Standby Liquid Control Initiated	RCIC/HPCI Response Adequate	Automatic Depressurization System Operates	LPCI or CS Response Adequate	Long Term Core Cooling	Potential Severe Core Damage	Sequence No.
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NSIC 166384 - Sequence of Interest for LOOP at Monticello

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 166384

LER NO.: 81-009

DATE OF LER: May 22, 1981

DATE OF EVENT: April 27, 1981

SYSTEM INVOLVED: Electrical system

COMPONENT INVOLVED: 4.16 kV buses

CAUSE: Operator error initiating electrical fault

SEQUENCE OF INTEREST: LOOP

ACTUAL OCCURRENCE: LOOP

REACTOR NAME: Monticello

DOCKET NUMBER: 50-263

REACTOR TYPE: BWR

DESIGN ELECTRICAL RATING: 545 MWe

REACTOR AGE: 10.4 years

VENDOR: General Electric

ARCHITECT-ENGINEERS: Bechtel

OPERATORS: Northern States Power Co.

LOCATION: 30 miles NW of Minneapolis, Minnesota

DURATION: N/A

PLANT OPERATING CONDITION: Refueling

TYPE OF FAILURE: Inadequate performance;
made inoperable

DISCOVERY METHOD: Operational event

COMMENT: