

## PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 160926

Date: October 31, 1980

Title: Stuck Open Relief Valve at Pilgrim 1

### The failure sequence was:

1. With the reactor at full power, a scram occurred due to main steam line high radiation.
2. To control pressure, "C" relief valve opened for 1 minute and closed successfully. HPCI and RCIC were placed in full flow test.
3. The MSIVs had closed during the event when the reactor depressurized beyond the MSIV closure set point of 880 psig. The "D" relief valve was opened to reduce the reactor pressure enough to be able to reset the scram and reopen the MSIVs.
4. The "D" relief valve stuck open.
5. Repeated attempts to energize/deenergize the relief valve solenoid valve from the control room failed to close the "D" relief valve and the plant depressurized to 20 psig.

### Corrective action:

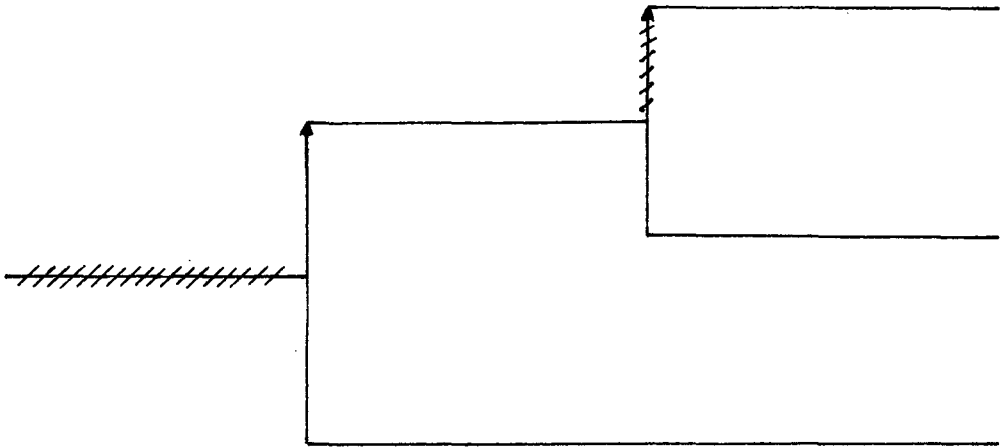
1. The plant was shutdown and the valve assembly removed and tested. The utility concluded that the probable cause of the failed valve was scoring on the main piston.
2. A spare valve assembly and solenoid were installed and the unit was returned to service.
3. The damaged valve was repaired.

### Design purpose of failed system or component:

The pressure relief system provides overpressure protection for the RCS.

Reactor trip from steam line radiation signal	Relief valves opened for RCS pressure control	"D" relief valve sticks open, resulting in RCS depressurization to 20 psig
---	---	--

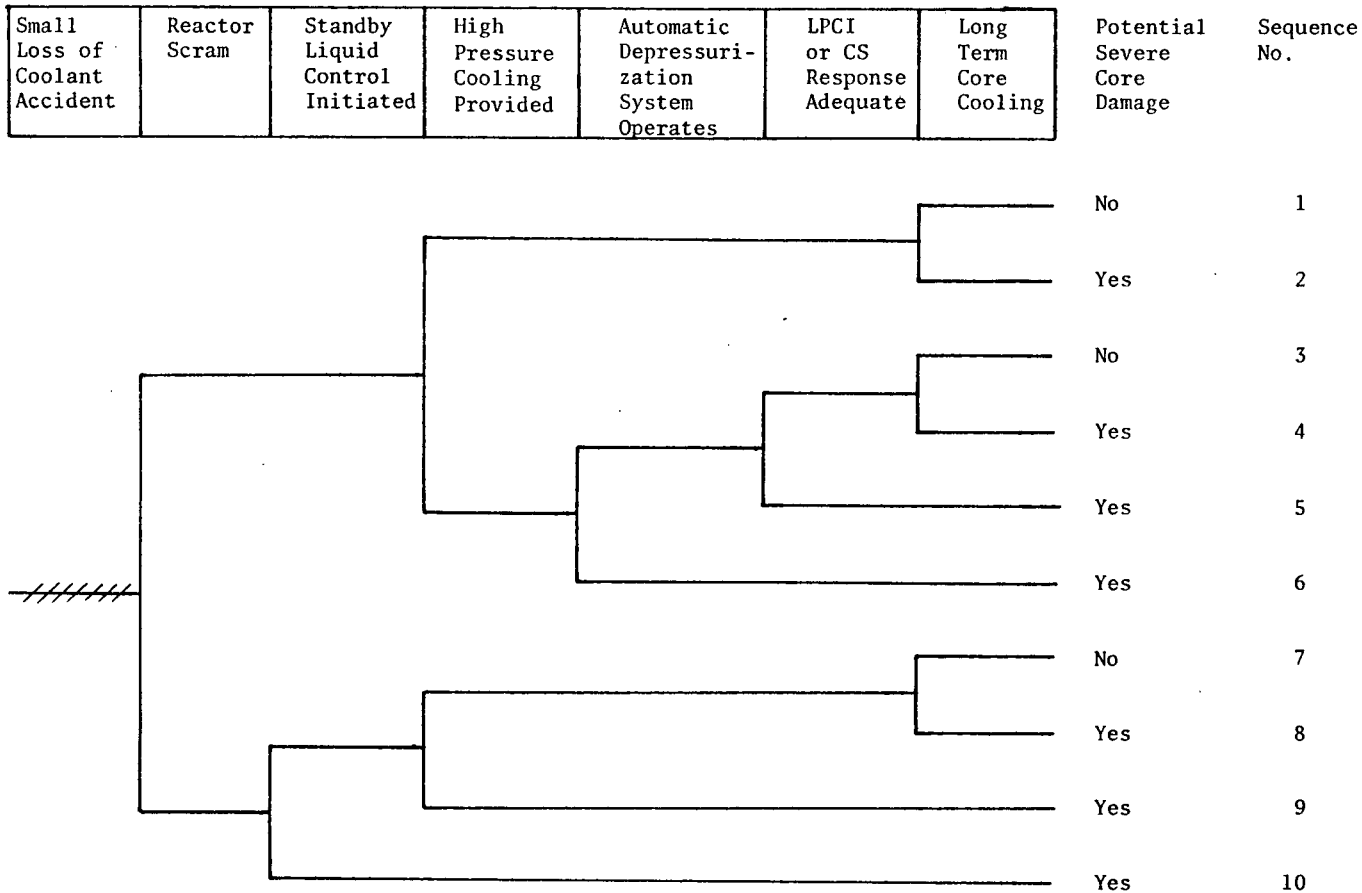
Potential  
Severe  
Core  
Damage



No - safety systems available  
for core cooling if required

No

No



NSIC 160926 - Sequence of Interest for Stuck Open Relief Valve at Pilgrim 1

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 160926

LER NO.: 80-079

DATE OF LER: October 31, 1980

DATE OF EVENT: October 1, 1980

SYSTEM INVOLVED: Pressure relief system

COMPONENT INVOLVED: Relief valve

CAUSE: Mechanical failure in valve operator

SEQUENCE OF INTEREST: Main steam line break

ACTUAL OCCURRENCE: Stuck open relief valve

REACTOR NAME: Pilgrim 1

DOCKET NUMBER: 50-293

REACTOR TYPE: BWR

DESIGN ELECTRICAL RATING: 655 MWe

REACTOR AGE: 8.3 years

VENDOR: General Electric

ARCHITECT-ENGINEERS: Bechtel

OPERATORS: Boston Edison Co.

LOCATION: 4 miles SE of Plymouth, Massachusetts

DURATION: N/A

PLANT OPERATING CONDITION: Full power

TYPE OF FAILURE: Inadequate performance

DISCOVERY METHOD: Operational event

COMMENT: