PRECURSOR DESCRIPTION AND DATA

NSIC Accession Number: 158231

Date: May 8, 1980

Title: ADS Valves Fail to Open at Dresden 3

The failure sequence was:

1. During startup on April 25, 1980, following the refueling outage the 3A target relief valve and the 3E relief valves failed to open during surveillance testing. The air operator on the 3A valve was not properly attached. The leak-off line on the 3E electromatic relief valve was obstructed. An orderly shutdown commenced. Valves 3A and 3E were repaired.
2. Startup resumed April 26, 1980; however, electromatic relief valves 3B and 3E failed to open at rated pressure during surveillance. Shutdown commenced and the operators were adjusted.
3. Startup resumed but was terminated when valve 3B again failed. The unit was brought to cold shutdown and 3B was examined and repaired by replacing the pilot valve gasket and adjusting the stroke of the adjustment arm on the pilot valve.
4. Startup resumed again; however, valve 3B again failed to open at rated pressure. Shutdown was initiated and the valve pilot assembly was replaced.
5. Startup began again; however, valve 3B still did not open at rated pressure nor did valve 3C (April 29, 1980). The unit was brought to shutdown and the valve problems investigated. The cutout switch for the solenoid coils was binding on valve 3C. This switch was repaired. The 3B valve was readjusted and the 3/4-in. pilot valve bleed-off discharge line was replaced with a 1-in. line. Similar adjustments and line-size changes were made on all the electromatic relief valves.
6. The unit was started successfully on May 3, 1980, with all valves operating satisfactorily. HPCI was tested and proven operable on each test throughout the event.

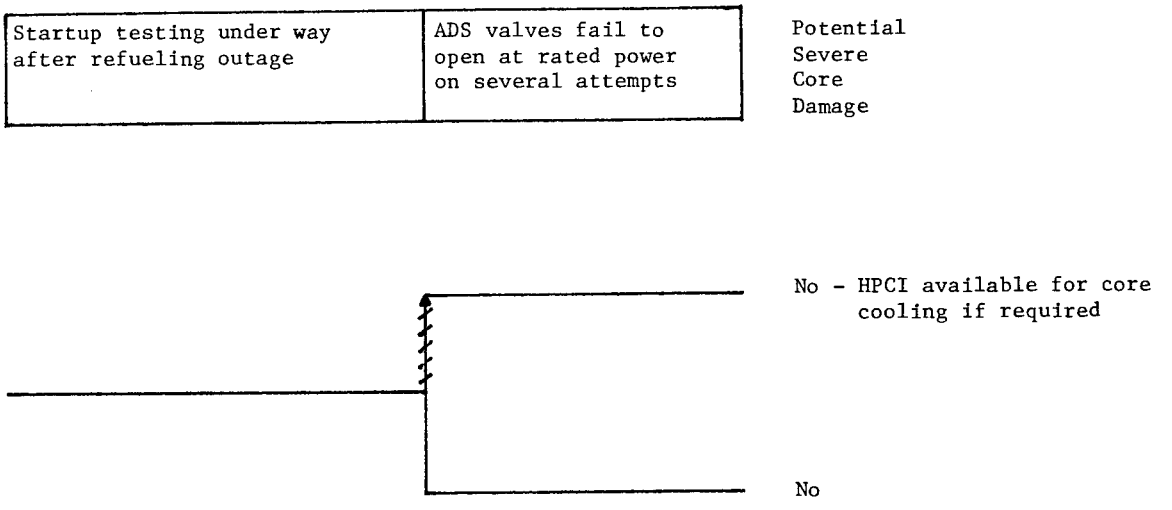
Corrective action:

All malfunctioning valves were repaired or replaced and tested to demonstrate operability.

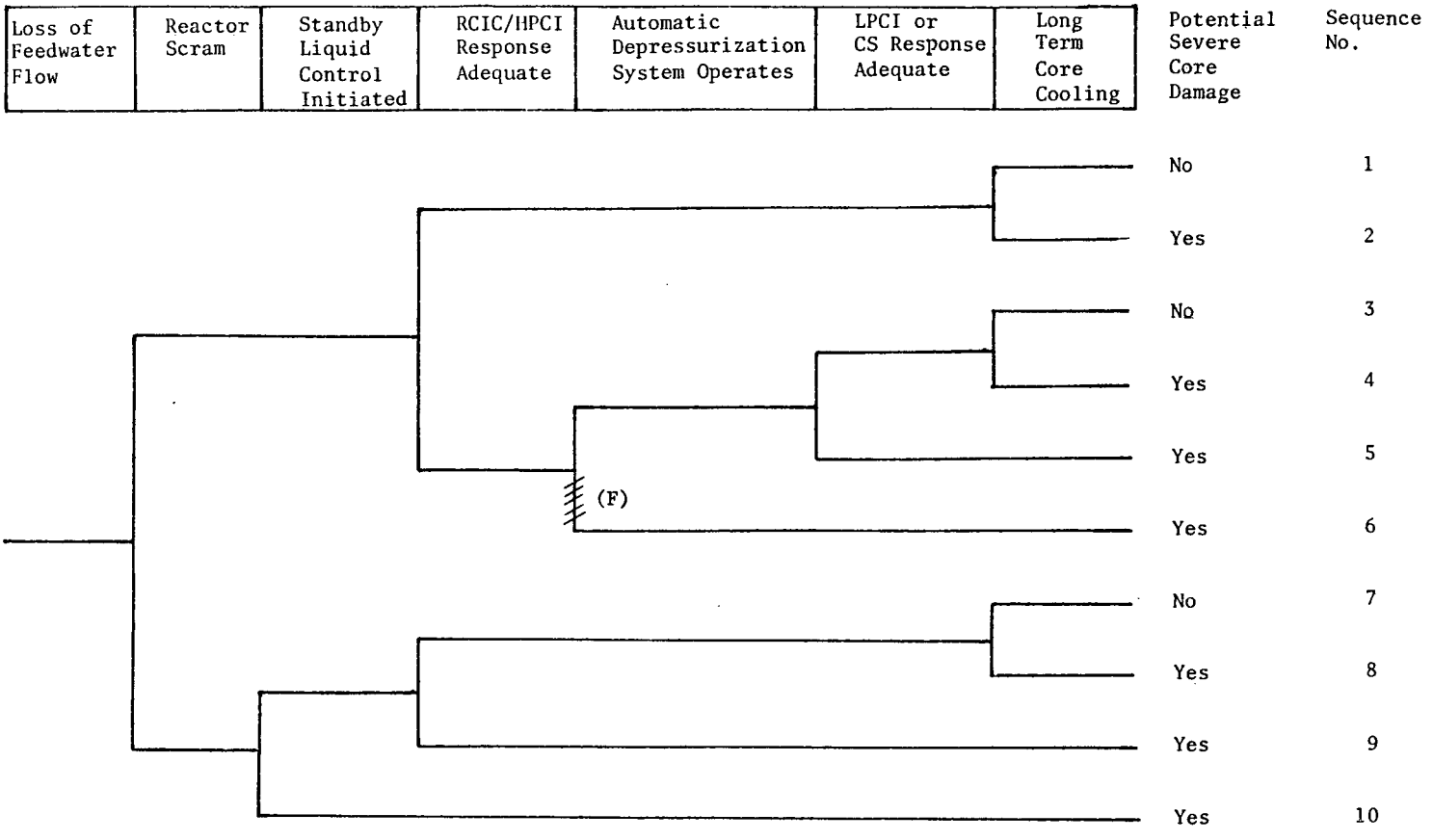
Improved valve design and system configuration was being evaluated for implementation at the next refueling outage.

Design purpose of failed system or component:

The ADS system provides for RCS depressurization to permit use of LPCI and core spray in the event RCIC and HPCI are unavailable for core cooling.



NSIC 158231 - Actual Occurrence of ADS Valves Fail to Open at Dresden 3



NSIC 158231 - Sequence of Interest for ADS Valves Fail to Open at Dresden 3

CATEGORIZATION OF ACCIDENT SEQUENCE PRECURSORS

NSIC ACCESSION NUMBER: 158231

LER NO.: 80-021

DATE OF LER: May 8, 1980

DATE OF EVENT: April 25, 1980

SYSTEM INVOLVED: Automatic depressurization system

COMPONENT INVOLVED: Relief valves

CAUSE: Design and equipment problems

SEQUENCE OF INTEREST: LOFW

ACTUAL OCCURRENCE: Automatic depressurization valves fail to open at Dresden 3

REACTOR NAME: Dresden 3

DOCKET NUMBER: 50-249

REACTOR TYPE: BWR

DESIGN ELECTRICAL RATING: 794 MWe

REACTOR AGE: 9.2 years

VENDOR: General Electric

ARCHITECT-ENGINEERS: Sargent & Lundy

OPERATORS: Commonwealth Edison

LOCATION: 9 miles east of Morris, Illinois

DURATION: 984 h (estimated), based on one-half of time between event and last startup on February 2, 1980.

PLANT OPERATING CONDITION: Starting up after refueling

TYPE OF FAILURE: Inadequate performance

DISCOVERY METHOD: Testing

COMMENT: Thoroughout the event 4 out of 5 valves failed, but a maximum of 2 out of 5 failed during any one test.