

ACTION PLAN # 18

TITLE: Startup Feed Valve SP-7A Problem Analysis

REV	DATE	REASON FOR REVISION	BY	CHAIRMAN TASK FORCE
0	6/22/85	Initial	<i>TM. Gibbs</i>	<i>EL. Boyer</i>

TITLE: STARTUP FEED VALVES SP-7A PROBLEM ANALYSIS

REPORT BY: Ron Uebbing/Tom Gulvas

PLAN NO. 18

DATE PREPARED: June 22, 1985

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This report has been prepared in accordance with the "Guidelines to Follow when Troubleshooting or Performing Investigative Actions into the Root Cause Surrounding the June 9, 1985 Reactor Trip", Rev. 4.

#### INTRODUCTION:

The following report is the analysis and evaluation for determining if there were problems associated with the operation of the Main Feedwater #2 Startup-Control Valve (SP-7A) or its controls during the June 9 transient.

#### SUMMARY OF DATA:

SP-7A is normally open when above 20% power. During the transient, SP-7A when closed automatically due to the initiation of SFRCS. After the SP-7A SFRCS trip was reset by the operator, SP-7A did reset properly. The SP-7A Channel 4 reset switch indicating light did not indicate this reset. The operator requested that the I&C technician replace the indicating bulb in this switch. A bulb was removed from the Channel 1 indicator and placed in the Channel 4 indicator by the technician to save time in verifying SP-7A reset status; this bulb blew immediately.

The alarm printout indicates that SP-7A and SP-7B startup feedwater valves reset at the same instance, this verifies the reset circuitry.

Additional verification of proper reset action of SP-7A is present in the DADS printout which reveals that main feedwater startup flow was established through loop 2 (SP-7A) and loop 1 (SP-7B) at the same point in time. SP-7A and SP-7B position printouts verify this. This printout also shows the removal of main feedwater flow as auxiliary feedwater flow was reestablished.

The SP-7A flow printout is higher than SP-7B and does not fall below 74 thousand pounds per hour when SP-7A and SP-7B are closed. This indicates the need to check the calibration of the flow measuring instruments associated with the operation of SP-7A.

As a followup, when time was available (about 0800, June 9, 1985), the SP-7A Channel 4 replacement indicator light bulb was checked and found to be the wrong voltage rating, 6 volt instead of the required 120 volt, the proper bulbs were installed in both channels and worked properly.

SP-7A SFRCS trip and reset logic is tested monthly under ST 5031.14, Sections 6.2, 6.3 and 6.4, and has recently shown no problems to be associated with the reset indication.

CHANGE ANALYSIS:

Not required.

HYPOTHESIS:

1. Startup feed valve SP-7A did function properly. The operator had no indication of proper reset function due to the reset indicating lamp failure. The lamp failure was due to random or normal end of bulb life, or to a voltage spike in the reset circuit.
2. SP-7A did not respond correctly. The action plan will address this hypothesis by the collection of data to show if there could have been flow through SP-7A.

## ACTION PLAN

FD 4408

Rev. 0

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DATE PREPARED	PREPARED BY
6/22/85	Ron Uebbing/ Tom Gulvas

TITLE

Startup Feed Valve SP-7A Problem Analysis

SPECIFIC OBJECTIVE

Verify the determination that there was not a failure of the main feedwater #2 startup control valve or its reset control circuits.

STEP NUMBER	ACTION STEPS	PRIME RESPONSIBILITY	ASSIGNED TO	START DATE	TARGET DATE	DATE COMPLETED
	All steps of this action plan are to be performed in accordance with the latest revision of "Guidelines to Follow when Troubleshooting or Performing Investigative Actions into the Root Causes Surrounding the June 9, 1985 Reactor Trip".	T. Gulvas				
1*	Collect information regarding possible sources of flow through SP-7A at the time of the transient.					
2	Ensure SP-7A is reset					
3	Have operators open SP-7A at hand/auto station.					
4	Trip SFRCS Ch. 2 & 4 on low steam generator level using "test" switches.					
5	Verify SP-7A closes					
6	With test switches held in block SFRCS 2/4 trip					
7	Reset SP-7A and verify SP-7A opens, monitor channel 4 reset lamp voltage, and verify reset lamp lights.					
8	Release test switches					
9	Repeat steps 1 through 7					
10	Return control of SP-7A to operations control					

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DATE PREPARED 6/22/85	PREPARED BY Ron Uebbing, Tom Gulvas

## Startup Feed Valve SP-7A Problem Analysis

### SPECIFIC OBJECTIVE

control circuits.

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