



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 31 1984

67574:176-188
Docket File

Docket Nos.: STN 50-482
and STN 50-483

FACILITIES: Wolf Creek Generating Station
Callaway Plant Unit 1

APPLICANT: Kansas Gas and Electric Company

LICENSEE: Union Electric Company

SUBJECT: MINUTES OF AUGUST 22, 1984 MEETING WITH KANSAS GAS AND
ELECTRIC AND UNION ELECTRIC COMPANY

On August 22, 1984 members of the NRC staff met with representatives of Union Electric Company, Kansas Gas Electric Company, SNUPPS, and Bechtel Corporation to discuss the applicant's proposed modification to their safe shutdown analysis related to a control room fire. Enclosure 1 is a list of attendees.

The modified response scenario for the control room fire is summarized in Enclosure 2. This response differs from previously proposed response scenarios by not relying on the removal of power to all AC buses and involves the installation of 7 additional isolation switches and the modification of 7 other existing isolation switches.

The detailed steps in the new SNUPPS scenario keyed to the action phases of Enclosure 2 are identified in Enclosure 3. To assist in discussing the submittal and to clarify the rationale used, SNUPPS submitted Enclosure 4 which identifies SNUPPS understanding of the NRC staff requirements related to this safe shutdown review. Enclosure 4 was modified during the meeting by the applicants to reflect additional clarification provided by the staff.

At the conclusion of the meeting the applicants agreed to docket a final proposal to the staff by August 24, 1984 to resolve the problems identified with the safe shutdown analysis by the staff. The submittal will identify a schedule for installation or modification of hardware changes and if possible an estimate of the length of time required for making the installation.

On August 23, 1984 Messrs. N. Fioravante, J. Wilson, and W. LeFave of the Auxiliary Systems Branch provided the applicants with the following additional clarification of the staff positions discussed during the August 22 meeting.

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- Credit can be taken only for a manual scram before leaving the control room
- The staff considers the following SNUPPS systems to be "direct"
 - MSIVs
 - MSIV bypass
 - Primary PORVs
 - Reactor vessel head vent
 - Excess letdown
- Associated Circuit - Spurious signal failures must meet the following conditions:
 1. No automatic function from the circuits in the fire area -- in conjunction with one worst case spurious signal;
 2. Any one spurious signal and;
 3. Spurious operation of all motor-operated valves in-series for high-low pressure interfaces.

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Enclosure:
As stated

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-2-

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ENCLOSURE 1

AUGUST 22, 1984 SNUPPS SAFE SHUTDOWN OUTSIDE

CONTROL ROOM MEETING

NRC

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Bill LeFave
B. J. Youngblood
R. L. Ferguson
R. Eberly

SNUPPS

Jim Cermak
Frank Schwoere

KG&E

Gene Rathbun

Bechtel

John S. Prebula
Patrick Ward
Chan Patel
Asif Hassan
Andy Woolard

Westinghouse

Pat Docherty

UE

Al Passwater

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<u>Phase</u>	<u>Time Period</u>	<u>Major Actions</u>
-	-	<ul style="list-style-type: none"> • Postulated Fire • Trip Reactor • Evacuate Control Room
A	0-5 min.	<ul style="list-style-type: none"> • Trip RCPs • Close PORVs • Trip Offsite Power to 4160B Bus and Start DG • Establish ESW • Trip-off Major Pumps • Assume Control from ASP
B	0-10 min.	<ul style="list-style-type: none"> • Establish Safety - Related Room Cooling • Isolate RWST
C	0-20 min.	<ul style="list-style-type: none"> • Establish CCW
D	0-30 min.	<ul style="list-style-type: none"> • Establish Charging • Close MSIVs
E	0-60 min.	<ul style="list-style-type: none"> • Long Term Hot Standby
F	0-7 hrs.	<ul style="list-style-type: none"> • Very Long Term

CALCULATION SHEET

CASE NO. _____ REV NO. _____
 DATE _____ CHECKED _____ DATE _____
 PROJECT _____ JOB NO. _____
 SHEET NO. _____

CONTROL ROOM FIRE NOT STANDBY SCENARIO

Rooms 3302 (SJOI)				Room 1402 (RSP)				OTHER ROOMS				
ACTION	ROOM	MCC	NOTES	ACTION	ROOM	MCC	NOTES	ACTION	ROOM	MCC	NOTES	REMARKS
1. OPEN EF-HA-28	3302	W602A	2					14. TRIP MV BREAK TO	1501	W604C		NEW ISO SWITCH
2. CLOSE EF-HA-28	3302	W602A	8					16. MV-102				
3. VERIFY PTOIB	3302	W602						15. TRIP MV BREAK TO	1501	W604C		MODIFIED ISO SWITCH
4. IF IS CLOSED OR MANUALLY CLOSE								EG-HA-16				
5. OPEN GD-TZ-11A	3302	W602A	8					16. TRIP MV BREAK TO	1501	W604C		
6. START C601B	3302	W602A	7					EG-HA-54				
7. CLOSE BA-HA-11A	3302	W602A	8					17. TRIP MV BREAK TO	1512	W603C		
								EG-HA-15				
8. TRIP MV BREAK TO	5201	W604D						18. MAN. OPEN EG-HA-102	1402	N/A		
CA-TZ-HA TO OPEN								19. MAN. OPEN EG-HA-16	1402	N/A		
9. OPEN GM-HA-17	5201	W604D	7					20. MAN. OPEN EG-HA-54	1401	N/A		
10. START C601B	5201	W604D	7					21. MAN. CLOSE EG-HA-15	1402	N/A		
11. TRIP MV BREAK TO	3302	W602A						22. MAN. OPEN BA-HA-11E	1107	N/A		
EF-HA-10								23. MAN. CLOSE BA-HA-11C	1318	N/A		
12. CLOSE EG-HA-10B	3302	W602A	9					24. MAN. OPEN BA-HA-11I	1107	N/A		
13. START PEG01B	3302	W602						25. TRIP MV BREAK TO	1115	N/A		
14. START PEG01D	3302	W602						BA-TZ-HA LOCALLY				
15. TRIP MV BREAK ON	3302	W602A						AND MAN. OPEN				
BA-HA-11E								26. CLOSE EM-HA-283	1409	W601B		EXISTING ISO SWITCHES ARE ADEQUATE
BA-HA-11C								27. CLOSE EM-HA-282	140	W601B		
16. TRIP MV BREAK ON	3302	W602A						28. TRIP MV BREAK ON	1501	W604C		EXISTING ISO SWITCHES ARE ADEQUATE
BA-HA-241								BA-HA-2105				
17. START PEG05B	3302	W602						29. MAN. CLOSE EG-HA-102	1323	N/A		
18. CLOSE BREAK TO	3302	W602	4					30. TRIP MV BREAK ON	1501	W604C		
LOCAL CENTER W604								28-HA-2351A-D				
19. START PEG01B	2201	W602						31. MAN. OPEN	1422	N/A		
								28-HA-2351A-D				
								32. TRIP MV BREAK ON	1409	W601B		
								EF-HA-22				
								33. MAN. CLOSE EG-HA-102	1508	N/A	3	
								34. MAN. CLOSE EG-HA-102	1509	N/A	3	



CALCULATION SHEET

CALC NO _____ REV NO _____

ORIGINATOR _____ DATE _____ CHECKED _____ DATE _____

PROJECT _____ JOB NO _____

SUBJECT _____ SHEET NO _____

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CONTROL ROOM FIRE SAFE SHUTDOWN SEQUENCE

ROOMS 3302/5301				ROOM 4413 (BSP)		OTHER ROOMS				
ACTION	ROOM	MCC	NOTES	ACTION	NOTES	ACTION	ROOM	MCC	NOTES	REMARKS
						33. MIP VLV RTN TO	1409	1402B		
						FF-W-50				
						34. OPEN EF-W-34	1409	1402B	8	NEW SWITCHES R00 TO
						35. OPEN ES-W-46	1409	1402B	8	ELIMINATE CRAT ENTRY
						36. MAN OPEN EF-W-32	1322	131A		
						37. MAN OPEN EF-W-50	1322	131A		
						38. START SC601B	1409	1402T	7	
						39. START SC601D	1409	1404T	7	
						40. THROW SWITCH TA	1410	1401B		EXISTING ISO SWITCH IS
						EM-W-8803B				INEQUATE
						41. THROW SWITCH TO	1410	1401B		EXISTING ISO SWITCH IS
						EM-W-8803B				INEQUATE
						42. MAN OPEN EM-W-8803B	1323	131A		
						43. MAN OPEN EM-W-8803B	1126	131A		
						44. CLOSE EM-W-1,2,3,4	1409	1401B		WELD SWITCHES ON PANEL
						45. CLOSE ES-W-6001A,2A	1409	1400		PHL FUSE #7
						46. CLOSE ES-W-6001B,2B	1409	1400		PHL FUSE #14
						47. CLOSE ES-W-6001A,4A	1409	1400		PHL FUSE #19
						48. CLOSE ES-W-6001B,4B	1409	1400		PHL FUSE #7
						49. CLOSE EM-W-1,2,3,4	1409	1400		PHL FUSE FROM
						50. TRIP DAMPER BLOWER TO	1409	1400		ELIMINATE CRAT ENTRY
						51. TRIP DAMPER BLOWER TO	1409	1400		
						52. START SC601B	1409	1400		NEW ISO SWITCH
						53. START SC601B	1409	1400		
						54. START SC601B	1409	1400		MODIFIED ISO SWITCH
						55. START SC601B	1409	1400		

CONTROL ROOM FIRE SAFE SHUTDOWN SCENARIO

4

NOTES

1. a. IF DIESEL DOES NOT START UPON SIMULATING LOSS THEN A MANUAL START OF THE DIESEL IN ROOM 520' WILL BE REQUIRED. PRESS START OR EMERGENCY START OR MANUALLY OPEN ONE PRIMARY AIR START VALVE AFTER ACTION 13 IN RM 3302
2. DC POWER TO 1B312 SHOULD BE TRIPPED AFTER ACTION 9 IN ROOM 3302 SO THAT BRKRS CAN BE ELECTRICALLY TRIPPED BY HAND TO THE DESIRED POSITION. ONCE DC POWER IS KILLED OPERATOR SHALL REVERIFY CORRECT BRKR POSITIONS AND MANUALLY TRIP/CLOSE ANY BREAKERS WHICH HAVE SPURIOUSLY MOVED
3. IF AB-PV-1,2 DO NOT CLOSE FROM ASP OPERATOR MUST GO TO ROOMS 1502 & 1509 TO MAN. CLOSE AB-V-012 AND AB-V-029
4. NGDE LOAD CENTER SERVES THE ULS COOLING TOWER EQUIPMENT (CALLAWAY ONLY). THIS WILL BE TRIPPED OFF TO PREVENT OVERHEAT OF COOLING TWR EQMT ROOM AND REESTABLISHED AT THE END OF THE SCENARIO, AFTER ACTION 54 UNDER OTHER ROOMS.
5. THIS VALVE MUST BE OPERATED WHEN CST REACHES LOW LEVEL (LONG TERM ACTION)
6. MSIV'S WILL BE CLOSED WITH PORTABLE 120 V DC SOURCE. WIRES TO THE VALVES WILL THEN BE CUT TO LEAVE VALVES IN CLOSED POSITION. ALTERNATELY, FOR INSURANCE
7. MODIFIED SWITCH. W/ RE-INSTALL FUSION, FOR THE INTERIM THROW 150 SWITCH AND REPLACE BLOWN FUSE

2. NEW ISO/OPEN-CLOSE SWITCH INCLUDING REDUNDANT FUSING, FOR THE INTERIM TRIP THE VLV BRKR AND MAN. OPEN/CLOSE VLV

9. NEW ISO SWITCH INCLUDING REDUNDANT FUSING FOR SOLENOID VLV. FOR THE INTERIM LOCALLY BLEED THE SOLENOID TO CLOSE THE VLV. VLV IS IN RM 1314

UNDERSTANDING OF NRC STAFF REQUIREMENTS

- Fire can be anywhere in control room; no size or mechanism postulated.
- Postulated adverse failures:
 - Must withstand any one spurious signal.
 - Need not postulate two "smart" hot shorts on one circuit, no more than 10% of the time
 - Adverse failure can occur at any time after reactor trip and evacuation of control room.
- Can take credit only for reactor trip before leaving control room.
- Manual repositioning of valves and other components is permitted, provided actions can be accomplished in time to prevent an unrecoverable plant condition.
- The following SNUPPS systems are considered "indirect":
 - MSIVs
 - MSIV bypass
 - Primary PORVs
 - Reactor vessel head vent
 - Excess letdown
 - SG blowdown
 - DG fuel transfer pump
 - Callaway ESW cooling tower