

SNUPPS

Standardized Nuclear Unit
Power Plant System

5 Choke Cherry Road
Rockville, Maryland 20850
(301) 869-8010

Nicholas A. Petrick
Executive Director

May 24, 1985

SLNRC 85- 0016 FILE: 0671.1
SUBJ: Task Analysis for SNUPPS DCRDR

✓ Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

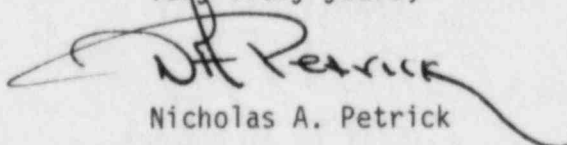
Docket Nos.: STN 50-482 and STN 50-483

Reference: SLNRC 85-12, 04/26/85: Same Subject

Dear Mr. Denton:

The reference letter transmitted the Final Report for the Task Analysis for SNUPPS Detailed Control Room Design Review (DCRDR) for the SNUPPS plants, Callaway Plant, Unit No. 1 and Wolf Creek Generating Station, Unit No. 1. The report details the process used by SNUPPS in performing the task analysis and presents the results in the form of findings and responses. Additional clarification is provided herewith for NRC use in evaluating the responses and should satisfy NRC staff concerns raised during a May 15, 1985 telecon. An implementation schedule for the findings resulting from the verification of the task analysis was provided by the reference and is included for your convenience. The attachment contains all the necessary information to complete the human factors issues addressed by both licenses, specifically, license condition 2.C.(8) for Wolf Creek and 2.C.(7)(a) for Callaway.

Very truly yours,


Nicholas A. Petrick

DJK/bds/16b5
Attachment

cc: G. L. Koester	KGE
J. M. Evans	KCPL
D. F. Schnell	UE
H. Bundy	USNRC/WC
G. C. Wright	USNRC/Reg. III
D. R. Hunter	USNRC/Reg. IV
B. Little	USNRC/CAL

8505300352 850524
PDR ADOCK 05000482
F PDR

A003
1/1

IMPLEMENTATION SCHEDULE FOR
FINDINGS RESULTING FROM THE VERIFICATION OF THE
TASK ANALYSIS FOR SNUPPS DCRDR

<u>Finding</u>	<u>Action Required ?</u>	<u>Implementation Callaway</u>	<u>Schedule Wolf Creek</u>
1	No	NA	NA
2	No	NA	NA
3	No	NA	NA
4	No	NA	NA
5	Yes	(1)	(2)
6	Yes	(1)	(2)
7	No	NA	NA
8	No	NA	NA
9	No	NA	NA
10	No	NA	NA
11	Yes	(1)	(2)

- (1) Implementation planned prior to implementing procedures based on the revision 1 Emergency Response Guidelines.
- (2) Implementation planned prior to entering mode 2 operation.

FINDINGS AND RESPONSES RESULTING FROM
THE VERIFICATION OF THE TASK ANALYSIS
FOR THE SNUPPS DCRDR
(Revised May 1985)

Finding 1

ECA 0.0, step 23 requires BIT temperature indication in the control room. None is provided.

Response: Boron Injection Tank (BIT) temperature indication in the control room is to enable the reactor operator to monitor the boric acid to ensure that it remains at temperatures above the solubility limit. Boric acid precipitation is a concern in boron concentrations exceeding 7000 ppm. The SNUPPS design utilizes a boric acid concentration of 2000 ppm boron which is the same concentration as the RWST. Since precipitation of boric acid is not a concern, BIT temperature indication is not required. No further action need be taken.

Finding 2

E-0, step 13A and E-3, step 13 require main steam readings of 615 psig, however, control room indicators are graduated in 20 psig increments. A reading of 615 psig could not, therefore, be read accurately.

Response: The value of 615 psig is a Technical Specification value required by the ERGs corresponding to steamline low pressure safety injection. Indication of this value is provided by the bistable signals which are input to both the control room annunciators and the reactor partial trip status panel, SB069. Annunciation and SB069 indication will occur when steamline pressure decreases to 615 psig. When this condition occurs, the operator will verify automatic steamline isolation has occurred or manually isolate, as necessary. For this reason, the value of 615 psig is not required to be read in the control room. No further action need be taken.

Finding 3

ERGs require plant setpoint settings of 615 psig, 1185 psig and 1235 psig to be read in the control room. Indicator graduations are presented in 20 psig increments.

Response: These are plant specific design setpoints requested in the ERG; the latter two represent the lowest and highest steam generator safety valve setpoints. Precise indication of these values is not necessary. With steamline pressure in the range of approximately 1100 to 1185 psig, corrective action would be to depressurize the secondary system sometime prior to the plant reaching the lowest safety valve setpoint. The value where the corrective action is taken depends on plant conditions and operator judgement. For this reason, the value of 1185 psig is not required to be read in the control room. With steamline pressure in the range of approximately 1185 to 1235 psig, the

operators would continue attempting to reduce pressure. If it is determined that the plant is approaching pressures that may exceed the highest safety valve setpoint, additional corrective actions will be initiated, depending on plant conditions and operator judgement. For this reason, the value of 1235 psig is not required to be read in the control room. The steamline low pressure safety injection setpoint (615 psig) is discussed in finding 2, above. No further action need be taken.

Finding 4

FRH.1, steps 5 and 18 require an indication of feedwater isolation "reset". This indication is not provided on the main control boards.

Response: Indication of the feedwater isolation signal reset is a verification step identified by SNUPPS in response to the ERG requirement for reset capability. Indication of signal reset is not required on the main control boards because the operator does not use this indication prior to taking action. Operators are trained to reset the FW isolation signal when the isolation valves fail to stroke. Feedback that the signal has been reset is the result of indication of valve movement. In addition, reset indication may be obtained from control room back panels SA 75A and B. FW isolation reset is unnecessary and the ERG provides contingencies in the event that FW isolation cannot be reset. No further action need be taken.

Finding 5

The plant specific requirement for CCW flow indication to the RCPs, as identified in revision 0 of the KGE EOPs, is approximately 40 GPM. The indicators on the main control boards are scaled in MPPH.

Response: The presence of flow is more important than knowledge of the exact indicated value. For this reason, the CCW HI/LO flow annunciator provided in the control room is available to indicate when the required flow is out of range. Site specific procedures referring to these units will be revised to show the units consistent with the indicator.

Finding 6

KGE procedure E-1, step 13A requires operator action at greater than 535 GPM. Control room indicators are graduated in increments of 100 GPM. Therefore, this value of 535 GPM cannot be read accurately.

Response: In response to this finding, both utilities' procedures will be revised to indicate a value readable on the indicator scale provided on EJ FI-618 and EJ FI-619 on RL-017, that is, a value that may be read to within 50 GPM.

Finding 7

In the emergency mode (fast close), the Main Steam Isolation Valves and Feedwater Isolation Valves close in less than 5 seconds. But in the normal mode (slow open/close) they close in approximately 5 minutes.

Response: The associated pushbuttons used for the "emergency" mode are engraved "FAST CLOSE" and the associated pushbuttons used for the "normal" mode are engraved "SLOW OPEN" and "SLOW CLOSE" to remind the operator of different valve response times. Through training, frequent periodic testing of these valves required by Technical Specification, and normal plant operations, operators know the approximate stroke times associated with each mode of operation. No further action need be taken.

Finding 8

The ERG background documentation for FR-C.1, Step C-1b, lists CCW to RHR heat exchanger flow as an instrumentation requirement. No instrument for this exists in the control room.

Response: Acceptable alternatives exist for the indication of CCW flow. Control room annunciators 51A and 53A alert the operator to HI/ LO CCW flow conditions. RHR inlet/outlet temperature indication across the heat exchangers is an acceptable indication of CCW flow to the heat exchangers, and is available in the control room. In addition, CCW to RHR heat exchanger flow indication is available locally and on the BOP CRT located in the control room. Because of these alternative indications, no further action need be taken.

Finding 9

ERG background documents for eight of the ERGs lists CCW Flow to Seal Water Heat Exchanger as an information requirement. No instrumentation for this information is provided in the control room.

Response: Acceptable alternatives exist for the indication of proper CCW flow. Annunciator 54F "CCW SEAL HX FLOW HILO" used in conjunction with both the BOP computer (to discriminate between HI and LO) and establishment of proper valve alignment will ensure adequate corrective action by the operator. Local flow indication is also available. No further action need be taken.

Finding 10

The background document for ERG E-3, step 2, lists steamline radiation monitors as an instrument requirement. None is provided in the SNUPPS control room.

Response: At this step in the procedure, the reactor operator has already determined that there is a steam generator tube rupture by previous procedures. The purpose of this step is to identify which steam generator has the ruptured tube. The following may be used by SNUPPS operators to aid in this determination.

- * Indication of blowdown and blowdown sample radiation in the control room. The reactor operator is directed by this procedure step to establish blowdown sample.

- ° Analysis of samples taken from steam generators. Technical specifications require gamma isotopic analysis of the secondary coolant be performed every 72 hours. Gamma isotopic analysis is the preferred method of monitoring since the minimum detectable concentration through gamma isotopic analysis is approximately $4-5 \times 10^{-7}$ uCi/ml as compared to in-line radiation monitoring of 1×10^{-6} uCi/ml.
- ° Unexpected rise in affected steam generator level would occur for a large tube rupture. The operators are trained to recognize this indication.
- ° Indication of radiation detected by PORV monitors if discharging.

The operator uses a combination of all of the above to make the final determination of which steam generator is ruptured thereby satisfying the procedure step requirement. Indication of steamline radiation monitors in the control room is not required.

Finding 11

Wolf Creek revision 0 procedures' value for spent fuel pool level is expressed in units of feet. The control room indication for this value does not read in feet.

Response: Control room indicator is in inches. Both utilities will revise their plant specific procedures to read this value in inches.