

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

March 31, 1986

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Lester S. Rubenstein, Director
PWR Project Directorate No. 2
Division of PWR Licensing - A
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 86-171
E&C/TLG/hts:6321C
Docket Nos. 50-280
50-281
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DPR-37

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1&2
CONTROL ROOM DESIGN REVIEW
FINAL SUMMARY REPORT

As delineated in our Control Room Design Review (CRDR) Program Plan submitted to you in accordance with NUREG-0737 Supplement 1 on March 1, 1984, Serial No. 087, and as revised by the comments provided to us in the Results of In-Progress Audit on January 8, 1985, we have performed a human factors engineering review of the Surry Power Station Units 1&2 Control Room. Enclosed is (1) our Final Summary Report, Volumes 1&2, documenting the approach, the process and the results of this review and (2) our Proposed Corrective Actions and Implementation Schedule, Attachment I, defining the proposed corrective actions to be taken as a result of the program.

Selection of the proposed corrective actions was a complex process that considered the inter-relationship with and between other ongoing Virginia Electric and Power Company programs, such as installation of a Safety Parameter Display System, operator training, instrument upgrade per Regulatory Guide 1.97, Emergency Operating Procedures Revision 1 upgrades, plant process computer replacement, etc. In addition, those corrective actions determined to be "safety significant" were reviewed for cost effectiveness and feasibility of installation on a conceptual design basis. The result of this review is the list of proposed corrective actions provided in Table FSR-1 of Attachment I to this letter. However, if during the development of the detailed design it is determined that a proposed corrective action is not cost effective or feasible as originally believed, it may become necessary to develop alternative corrective actions. These alternative corrective actions will be reviewed and assessed in accordance with the Nuclear Design Control Program, which incorporates the same guidelines used in our CRDR review process.

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Please note that the proposed corrective actions identified in Table FSR-1 of Attachment I are for the "safety significance" HEDs and that no corrective actions are included for HEDs without "safety significance." Potential corrective actions for HEDs without "safety significance" were identified by the CRDR Project Team and can be found in Volume 2 of our Final Summary Report. These potential corrective actions will be reviewed as part of the normal Virginia Electric and Power Company program for plant improvements.

Very truly yours,



W. L. Stewart

Attachments

- 1) Proposed Corrective Actions and Implementation Schedule, Attachment I (6 copies)
- 2) Final Summary Report (6 sets - 2 Volumes/set)

cc: Dr. J. Nelson Grace
Regional Administrator
NRC Region II

Mr. D. J. Burke
NRC Resident Inspector
Surry Power Station

**CONTROL ROOM DESIGN REVIEW
FINAL SUMMARY REPORT
SURRY POWER STATION UNITS 1 & 2**

INTRODUCTION

The object of the review and assessment phases of the Control Room Design Review (CRDR) was to identify ways to "improve the ability of the nuclear power plant operator, to prevent or cope with accidents if they occur by improving the information provided to them." This process involved collection, reduction and analysis of data pertaining to the adequacy of the control room design from a human factors perspective. This was followed by an assessment of the human engineering discrepancies (HEDs) identified in the process.

REVIEW PHASE

The review phase of the CRDR was comprised of the following four activities discussed in the Final Summary Report (FSR), Volume 1:

1. A review of normal, abnormal and emergency operations experience through interviews and document reviews (FSR Chapter 2).
2. A control room survey associated with normal, abnormal and emergency operations to identify deviations from human factors principles (FSR Chapter 3).

3. A system functions review and task analysis of emergency operations (FSR Chapter 4).
4. A task verification and validation of emergency operations (FSR Chapter 4).

ASSESSMENT PHASE

The assessment phase of the CRDR was comprised of the following three activities discussed in Chapter 5 of the Final Summary Report, Volume 1:

1. Review and confirmation of the HED.
2. Assessment of the HED against three criteria: the potential for error, the consequences of error and the safety importance.
3. Assignment of a category/priority rating to the HED.

The individual HEDs were organized into the following three groupings by category and priority as follows:

- Group A - 3/3 criteria were judged high
- Group B - 2/3 criteria were judged high
- Group C - 1/3 criteria were judged high

REVIEW OF SAFETY SIGNIFICANT HEDS AND
THE IDENTIFICATION OF THEIR PROPOSED
CORRECTIVE ACTIONS

Within each category/priority group the HEDs with common potential corrective actions were collected. The potential corrective actions for the Group 'A' HEDs and Group 'B' HEDs with high safety importance were identified as the HEDs with "safety significance". Both Engineering and Operations Management reviewed the potential corrective actions for these safety significant HEDs. These reviews included preliminary feasibility studies, preparation of budgetary cost estimates and cost-effective evaluations. In cases where Management's review took exception to the HED Assessment Team disposition for a HED, the HED was returned to the Team for their review and approval. These reviews resulted into the proposed corrective actions listed in Table FSR-1 of this Attachment.

Table FSR-1, provides a description of the proposed corrective action, along with the associated HEDs which are addressed by that action. Justification is provided where the proposed corrective action is anticipated not to fully correct the HEDs. However, in some cases, the extent to which a corrective action will fully correct an individual HED within a grouping cannot be determined until the development of the final engineering design. The proposed corrective actions in Table FSR-1 identify the current scope.

IMPLEMENTATION PLAN

The proposed corrective actions for HEDs with "safety significance" fall into five implementation categories: immediate, short term, long term, normal program and no action.

Immediate (I) Corrective Actions (0-2 Years)

Thirty-one (31) proposed corrective actions were identified for HEDs which could be corrected by simple enhancements, procedure revisions and/or training. There were also some extensive corrective actions that have been incorporated into design changes that were in progress for other programs. At this time, the majority of these immediate corrective actions are in progress or complete.

Short Term (ST) Corrective Actions (0-4 years)

Thirty-three (33) proposed corrective actions were identified for HEDs which could be corrected by short term actions (enhancements, major procedure revisions, and design changes).

Long Term (LT) Corrective Actions (0-8 years)

Two (2) proposed corrective actions were identified for HEDs to be corrected by complex or interrelated design changes. The exact scope of these changes is dependent upon the development of design alternatives and

further evaluation of the impact of design changes associated with other programs (e.g. R. G. 1.97, SPDS, computer upgrade, etc.).

Normal Program (NP)

Sixteen (16) proposed corrective actions were identified that were not cost-effective and/or required space that is not available under current conditions. These corrective actions could become cost-effective and implemented at a later date if the need arises for a design change in the same area or on the same equipment or if the necessary space becomes available.

No Action

Four (4) proposed corrective actions were identified for HEDs with "safety significance" where there is no feasible or cost-effective corrective action. In these cases, a justification is provided. These changes could possibly be made given the freedom of a new plant design, but the constraints of existing equipment in an operating plant make the costs of a corrective action high compared to the potential benefits.

SUMMARY

The final implementation schedule for individual proposed corrective actions will vary with the availability of resources (including work time and space in the control room) and the complexity of the final corrective action. Table

FSR-1 provides a summary of the safety significant HEDs with the proposed corrective actions and proposed implementation schedules. Please note that as specified in Paragraph g, Section 5.2 of Supplement 1 to NUREG 0737, the scheduled durations identified in Table FSR-1 will begin after the NRC has issued an SER and any open issues are resolved.

TABLE FSR-1
CONTROL ROOM DESIGN REVIEWS
FINAL SUMMARY REPORT
SURRY POWER STATION UNITS 1 AND 2
SUMMARY OF PROPOSED CORRECTIVE ACTIONS AND
IMPLEMENTATION SCHEDULE

PROPOSED CORRECTIVE ACTION RESPONSIBILITY	PROPOSED IMPLEMENTATION SCHEDULE			NP	No	Total
	I (0-2 yrs)	ST (0-4 yrs)	LT (0-8 yrs)			
ENGINEERING DESIGN CHANGE	7	31	2	14	3	57
NON-DESIGN CHANGE (OPERATIONS)	19	2	---	2	---	23
TRAINING	6	---	---	---	---	6
TOTAL	32	33	2	16	3	86¹

¹ Total number of Corrective Actions per listing is 83 while, the total number of Corrective Actions listed in Summary is 86, 3 greater than the listing, due to the split implementation times on study-type Corrective Actions.

TABLE FSR-1
CONTROL ROOM DESIGN REVIEW
FINAL SUMMARY REPORT
SURRY POWER STATION UNITS 1 AND 2
PROPOSED CORRECTIVE ACTIONS AND IMPLEMENTATION SCHEDULE

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA1E	To address high ambient noise in control room; limit access to Control Room on day shift, distribute lower powered speakers strategically, and investigate alternative noise reduction techniques. Resurvey control room. Coordinate with CA73E.	ST	20000011 20000004 20000010 20000012 20A00209 22A00210	
CA2E	Provide meter for total Auxiliary Feed-water Flow (0-1500 GPM). Coordinate with CA11E.	ST	20002018	
CA3N	Emphasize in training that all controllers indicate demand not position.	I	20001104 22A02029 22A03041	
CA4E	Provide RED/GREEN lights on benchboard for Reactor Trip Breaker Status.	I	20001107	
CA5E	Existing Core Cooling Monitors to be replaced by Integrated Core Cooling System.	I	20A01136 20A02205 23001224 22A02047 22A02048 20A02233	

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA6E	Demarcate and add colored background on Auxiliary Shutdown Panel same as MCB. Tape is to be removed and replaced with orange and purple color dots on labels. Coordinate with CA21E and CA24E.	ST	20A01305	
CA7T	Train operators to go to Radiation Monitor trend recorders for trend information and to Radiation Monitor meters for current values.	I	20A02015	
CA8T	Scale to pen relationship has been coded on multiscale meters. Initiate job performance measures (JPM) on reading of multiscale meters.	I	20A02016	
CA9E	Provide Pressurizer Spray Valve position indication with RED/GREEN Lights.	ST	20A02045 22A03206	

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA10E	Perform study of Annunciator Alarm System and implement upgrades as necessary.	ST/LT	20A02106 20002120 20002121 20002122 20A02101 20A02102 20A02906 20A02103 20A02119 20A02125 20A02903 22A02302 20B03005 22A02110 22A02111 22A02112 22A02114 22A02115 22A02116 22A02123	Additional study of the Annunciator Alarm System is required due to the complexity and variety of its problems. Also, timing and integration of the corrective actions for the alarm system must consider the impact of the installation of the SPDS computer and the planned upgrade of the plant process computer.

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA11E	Rescale auxiliary feedwater flow indicators (linear, 0-500 GPM-increments of 10 GPM) Coordinate with CA2E.	ST	20A02216 20A02230 23002243	
CA12E	Redesign Permissive Status Lights to ensure consistency in terms of messages, illumination sequence, location and arrangement.	LT	20A02303 20A02315 22A02308 20A01313	
CA13N	Periodic tests will be performed in accordance with PT-26.1 to verify operation of Radiation Sampler filter light.	I	20A02307	
CA14E	Replace Reserve Station Transfer control switch handles to minimize inadvertent operation.	I	20A03007 22A03037 20B23029	No guards are to be provided for these control switches since: (a) no inadvertent operation has ever occurred in twelve plus years of operation (b) existing annunciation would inform operator if inadvertent operation occurred (c) these control switches, with exception of the Reserve Station Transfer whose handles are being replaced, are redundant trains of which only one could be inadvertently operated.
CA15E	Rearrange EDG #3 panels to be similar to EDG #1 and EDG #2 and label accordingly. Coordinate with CA23E and CA75E.	ST	20A03033	
CA16T	Investigate difficult to operate controls for any maintenance problems. Emphasize use of manual controls during training using job performance measures (JPM).	I	20A03013	

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA17E	Change flow indication for CVCS Charging and Letdown (linear 0-300 GPM).	ST	20A03405 20A02214	
CA18E	Change existing annunciator for Safety Injection actuation to Train "A" actuation only. Add new annunciator for Train "B" Safety Injection actuation.	ST	20A03406	
CA19E	Rewire Pressurizer Heater Control switches so that RED light is not defeated when switch is in pull-to-lock position and green light is extinguished.	ST	20B12305	Switch handle change is not required. Possible error in response is a function of incorrect information provided by status lights, not operation of wrong equipment.
CA20N	Ensure enforcement of standing order that controls use and placement of temporary labels (operator aids).	I	22A01147 22001139 22A01141 22A01150	
CA21E	Provide correct lenses as required on Auxiliary Shutdown Panel to meet green/amber/red convention. Coordinate with CA6E and CA24E.	ST	22A01151	
CA22E	Remove unnecessary indicating lights from Heat Tracing Panel.	NP	22A01308	
CA23E	Modify EDG Megawatt, Megavar and RPM indication on EDG panels to improve viewing. Coordinate with CA15E and CA75E.	ST	22A02086 22A02314	
CA24E	Determine displays that most significantly affect plant safety on Auxiliary Shutdown Panel and modify to improve viewing. Coordinate with CA6E and CA21E.	ST	22A02088	Relocation of secondary side plant controls is not necessary to ensure plant safety and is not cost beneficial.

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA25E	Provide direct pressurizer PORV position indication with RED/GREEN status lights.	I	23001207	
CA26E	Provide better functional arrangement of Containment Sump Level indicators Coordinate with CA48E.		23001223	
CA27E	Provide better functional arrangement of SI and CLS controls.	ST	23001225	
CA28N	Ensure that Annunciator Response Procedure instructs Operators to reset the Pressurizer Safety Valves annunciator.	I	23A02917	
CA29E	Perform study to identify methods to correct control room glare/lighting problems and implement improvements.	ST	20000009 20000008 20000001 20000003 20000014	
CA30N	Label RCS Pressurizer Pressure Recorder Readings.	I	20001106	
CA31E	Provide Reactor Coolant System (RCS) TH & TC on SPDS computer.	I	20001220 23B01001	

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA32E	Add RCS WR pressure to left benchboard in RCS System Controls area (0-3000 PSIG).	No	20001221 23B01001	Addition of RCS wide-range pressure indication is not feasible due to physical limitations (interferences with terminal blocks, board structural/seismic steel and available space). No qualified recorders available to fit into limited space. This indication is already provided on SPDS computer and is located on left vertical board.
CA33N	Initiate Job Performance Measure for Operators on setting of Hagan Process Controllers.	I	20002010	
CA34T	Train Operators in correlation of recorder output to display output.	I	20002011	
CA35T	Emphasize log scale reading in training.	I	20002012	
CA36E	Redesign Auxiliary Ventilation Panel. Consolidate indication and controls for common ventilation equipment on single board and provide mimic.	NP	20003016 20A01215 20A03209 23003019 22A01310 22A03215 22F23026	
CA37E	Relocate cables to the PAMS panel and remove ramp which covers them.	No	20A00114	The cables cannot be routed under the floor to eliminate the ramp because of interferences with column and steel, preventing core drilling. The ramp was required for installation.

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA38E	Perform Labeling study to determine labeling needs and concerns of Operations. Relabel boards to 0700 guidelines.	ST	20A01101 20A01143 20A01148 22A01108 22A01126 22A01133 22A01149 20A01311 22A01109 22A01110 22A01111 22A01129 22A01137 22A03101 22A01112 22A01114 22A01120 22A01130 22A01145 23A01006 22A01122 22A01123 22A01124 22A01132 22A01146 20A02042 22A01144 22A01301 22A01304 22A02311 22A02313 23A03210 23A03213 20A02017 22A02603	

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA39E	Selectively investigate for Lamp Test capability, any safety systems with legend lights that have single bulbs and that are not normally illuminated.	ST	20A01216	
CA40N	Change RED light on Unit 2 EDG to YELLOW light for "EMERG GEN #2 TRIP AUX RESET BUTTON".	I	20A01316	
CA41E	Provide visual displays and indications missing from control room primary area.	NP	20A02005 20A02052 22A02027	
CA42E	Provide expanded scale for Chemical Addition Tank Level on RWST Recorder.	NP	20A02210 22A02070	
CA43E	Provide valve position indication on flow controllers with RED/GREEN lights.	NP	20A02035 22A03216 20A02050	
CA44E	Provide larger scales on Vent Air Flow Indicator and Vent Stack Flow Indicator. Increase scale range to accommodate (maximum) flow. If feasible, tilt indicators forward to improve reading.	NP	20A02036 22A02073	
CA45E	Change Condenser Vacuum indication scale (20-30 inches Hg VAC).	NP	20A02202 20A02913 22A02078	
CA46E	Perform study to determine scale requirement for Boron Recovery Primary Drain Tank Pressure and implement.	ST/NP	20A02204	

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA47N	On Boric Acid Storage Tank level indication mark scale face with Tech. Spec. limit and alarm setpoint.	I	20A02215	
CA48E	Rescale Recirc Spray Sump Level Indication (2 inch increments) and put markings on scale as necessary. Coordinate with CA26E.	I	20A02236 22A02060	
CA49N	Rescale Containment Sump Level Indication (0 to 25 inches with 5" major increments and 1" minors).	I	20A02241	
CA50N	Replace scratched glass and remove legends from trend recorder windows. Coordinate with CA51N.	I/NP	20A02402	
CA51N	Replace trend recorder continuous flow pens with felt tip cartridges, as required.	ST	20A02403 20A02410 23A02415	
CA52N	Implement Preventive Maintenance Program for trend recorders. Coordinate with CA49N.	I	20A02404	
CA53E	Provide permanent installation of SG Level Narrow Range trend recorder on bench board near Feedwater Control station.	NP	20A02414 22A02082	
CA54E	Perform studies to change setpoints, as necessary, on nuisance alarms in Control Room.	NP	20A02904	
CA55E	Make control switches for the steam supply to the Steam Driven Aux Feedwater Pumps the same as other valve control switch.	ST	20A03011	Relocation of switch not necessary. Switches are redundant trains of which either one can initiate pump operation.

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CA56E	Rearrangement of Charging Pump MOV controls to be more functionally arranged.	NP	20A03031	Not necessary to relocate or rearrange valve controls to benchboard. Valves are utilize for maintenance purposes only.
CA57E	Provide switch guards for Condenser Circulation Water Inlet Valves with clear flip-up covers.	I	20A03039	
CA58E	Provide switch guards for Main Steam Trip Valves with clear flip-up covers.	I	20A03051	
CA59E	Relocate Annunciator pushbutton controls on benchboards for ease of access.	ST	20A03069 23003052	
CA60E	Investigate rewiring of existing status lights on Auxiliary Feedwater Pump Control Switches to extinguish in pull-to-lock position and the desireability of adding a 4th (white) status light.	ST	20B22306	
CA61E	Rearrange Accumulator Test Line Isolation Valves control switches. Coordinate with CA74E.	ST	20V13022 20003017	
CA62N	Rewrite list of abbreviations/acronyms to include all abbreviations/acronyms used on labels, annunciators, legends.	I	22A01302	
CA63N	Add zone markings to level indication for Accumulator Tanks.	I	22A01704	
CA64N	Add an intermediate graduations (heavier line) for each value of 10 on pressure indication for the Containment Leakage Monitoring System.	I	22A02023	

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA65E	Redesign and replace scales that have graduations which do not progress by 1, 2, 5, 10 or by those values multiplied by 10.	ST	22A02025	
CA66E	Provide SG Wide Range Level indicators and Condenser Vacuum indicators on right vertical board.	NP	22A02058	
CA67N	Provide a step stool for Chemical Addition Tank (CAT) indication.	I	22A02083	Various indications identified are only required for trending data collection. Alarms are provided to alert Operators of potential problems. CAT level narrow range indication also is to be provided at a lower position per CA41E.
CA68N	Provide step stool reading for various indicators above 70 inches on vertical board.	I	22A02084	
CA69E	Relocate High Range Radiation Monitor trend recorders lower on panel. If feasible, add two recorders.	NP	22A02087	
CA70E	Change scale plates to white on Pressurizer Safety Valve Position Indication.	ST	22A02220	
CA71E	Replace scales that have more than nine graduations between numerals with ones showing numerals every 10th increment.	ST	22A02222	
CA72E	Replace existing trend recorders with recorders that can be read on real time basis.	ST	22A02409 20A02003	

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA73E	Adjust alarms to unmistakably alert/get Operators' attention. 10DBA above average ambient background generally adequate. Coordinate with CA1E.	ST	20A02902 22A02905	
CA74E	Rearrange switches so Accumulator Fill Valves are above Accumulator Drain Valves. Improve labeling. Coordinate with CA60E.	ST	22A03034	
CA75E	Modify EDG Speed and Voltage control switch positions and labeling so raise is to right, lower is to left. Also include Main GEN VOLT REG Control Switches. Coordinate with CA15E and CA23E.	ST	22A03601	
CA76N	Review procedures for use of shared equipment to ensure their adequacy.	I	22A04002	
CA77T	Provide simulator training for Operators in doubling theory, I/M plotting closeness to criticality vs. rod insertion limits.	I	22A05002	
CA78E	Provide narrow-range control, indication and annunciation for RWST temperature.	No	22A05006 20A02212 22A02031	Root cause exists with capability of RWST chillers to maintain temperature at desired level.
CA79N	Ensure cooldown rates available on SPDS computer as backup to Process Computer. Heatup/cooldown rate curves via graphics program.	I	23002406 21A02412 23A02413	
CA80N	Improve operability of Main Steam PORVS and provide status on Shift Turnover Sheet.	I	23003046	
CA81E	Provide remote throttle capability (trip close) to Bypass Valves for Main Steam Trip Valves on Benchboard in vicinity of Trip Valves.	NP	23003047	

<u>CORRECTIVE ACTION #</u>	<u>PROPOSED CORRECTIVE ACTION</u>	<u>SCHEDULE</u>	<u>ASSOCIATED HEDS</u>	<u>JUSTIFICATION FOR PARTIAL OR NON-CORRECTION OF HED</u>
CA82N	Upgrade Simulator Controls and Instrumentation to reflect current control room. Prior to installation in the CR, modifications will be evaluated to determine the necessity and feasibility of installation in the simulator first.	ST/NP	23A01002 23001105	
CA83E	Perform tactile change to inverse acting controllers and label appropriately to indicate 100% demand is full close.	ST	23A03102 20A03049 23A03218	