

DETAILED CONTROL ROOM DESIGN REVIEW

SUMMARY REPORT SUPPLEMENT

RIVER BEND STATION-UNIT 1

MAY 1985

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6.0 DCRDR SUMMARY REPORT SUPPLEMENT

6.1 INTRODUCTION

This document is designed to be inserted in the RBS Detailed Control Room Design Review (DCRDR) Summary Report (Docket No. 50-458, dated 10/31/84) as section 6.0. Its purpose is to:

- 1) Close out open DCRDR items that were not previously completed due to the construction status of RBS at that time
- 2) Address all open and confirmatory items contained in the RBS Safety Evaluation Report for the DCRDR (sections 6.2 through 6.6)
- 3) Provide updated information for HEDs whose implementation schedule has changed from the DCRDR Summary Report

6.2 HUMAN FACTORS SPECIALIST CONTINUED PARTICIPATION

As described in section 1.1 of the DCRDR Summary Report, GSU established a qualified multidisciplinary review team to perform the various tasks of the DCRDR. Procedures for performing these tasks were developed and included in the Summary Report and indicated the extent of participation of team members. To clarify the procedures used to resolve and implement HEDs, GSU submitted letter RBG-19,936 (Docket No. 50-458), dated January 23, 1985. This section will complement that letter by providing additional information to confirm the continued participation of human factors specialist in the remaining DCRDR activities.

6.2.1 HED Resolution

The resolution of RBS HEDs required a substantial amount of plant design research to ensure accurate improvements were being developed. It was, therefore, not effective to keep

a human factors specialist at the site during this research period. Instead, after the design research was completed, Mr. Robert J. Liddle (General Physics Corporation - see Appendix B of Summary Report for resume) reviewed the marked up drawings, conventions, and proposed changes. This ensured that the HED corrective actions were in compliance with human factors conventions prior to their implementation on the control boards.

Discrepancies identified by Mr. Liddle were submitted to GSU for action. GSU worked with Mr. Liddle to resolve discrepancies and took necessary steps to implement acceptable human factors corrective actions.

6.2.2 HED Verification

Once the corrective actions are implemented on the control boards, Mr. Liddle will return to the site to participate with GSU in verifying design improvements. The objectives of this verification process are listed in section 1.3.4 of the Summary Report.

Throughout the HED Resolution and Verification phases, Mr. Liddle was and is available for consultation on any human factors problems or questions that arise.

6.3 TASK ANALYSIS DOCUMENTATION

The Verification of Task Performance Capabilities (i.e., availability and suitability of displays and controls) followed the process described in Section 1.2.4 of the DCRDR Summary Report. The staff reviewed this process at a January 23, 1985 audit meeting with the GSU DCRDR team leader and GSU's human factors consultant (General Physics Corporation). The purpose of the audit was to determine if the function and task analysis and verification processes were adequately performed and documented. The audit found GSU had identified the discrete tasks, decisions and actions that operators need to undertake in order to carry out emergency actions. A review of GSU's documented information and control capabilities revealed that the information and control requirements included more than the minimum requirements for task completion.

The audit also found that the process employed in the verification of availability and suitability of displays and controls was adequate and identified HEDs correctly. For final confirmation, GSU was requested to provide written documentation in the DCRDR supplement report for at least one emergency sequence which "unequivocally" demonstrates how it was determined that the inventoried displays and controls provided the necessary information and control capability (i.e., Verification of Availability and Suitability).

Documentation for Sequence A, Inadequate Core Cooling, is provided with this response to demonstrate the steps followed and the resultant data generated in the Verification process.

The Verification of Availability and Suitability of displays and controls was conducted in the following manner:

1. Task Analysis Worksheets completed through the "I&C Identification" column were accessed via the computerized database to generate an I&C alphabetical listing by scenario and task (see Appendix A).
2. Guidelines for Documentation of Instrumentation and Controls (Appendix B) were developed to aid startup system engineers on-site to document key criteria to be used in the Verification of Suitability Process Flowchart (See Figure 1.2-9, p. 1-26 of DCRDR Summary Report).
3. Data regarding as-built instrumentation and controls was compiled on Tables 1 and 2 respectively in the guidelines (See Appendix C for examples of completed data sheets).
4. A control room inventory list was compiled on an I&C Equipment Characteristics Form (See Figure 1.2-8, p. 1-23) based upon a set of control board photographs of the RBS Instrumentation and Controls (See Section 1.2.3.7 of the DCRDR Summary Report).
5. The Verification of Availability of displays and controls was done by comparing the requirements in the "Information and Control Requirements" column with the "I&C Identified" column of the Task

Analysis Worksheet. For detailed comparison of the parameter, range, scale, etc. in the Verification of Suitability step below, as-built display and control characteristics were provided in the control room inventory I&C Equipment Characteristics forms and in the Verification Tables 1 and 2 (See Appendix D).

6. If the displays and controls were available to meet the task requirements, a "Y" was entered on the Task Analysis Worksheet in the "Avail." column for that task. If there was no display or control available, then a "N" was placed in the "Avail." column and an HED was written on the discrepancy.
7. The Verification of Suitability of displays and controls was conducted using the Verification Flow Chart (See Figure 1.2-9, p. 1-26 in DCRDR Summary Report). If a control or display was available, then the relevant characteristics in the "Information and Control Requirements" column were compared with the as-built display and control characteristics. The as-built display and control characteristics were provided in the I&C Equipment Characteristics form and in the Verification Tables 1 and 2 (See Appendix D). General Physics subject matter experts and human factors personnel made the Verification decisions based on the data described above.
8. If the displays and controls did not satisfy all three decision points in the Verification Flowchart, then a "N" was entered on the Task Analysis Worksheet in the "Suit." column. The decision point(s) not satisfied were checked on the Equipment Suitability HED form and the discrepancy was subsequently written up as an HED (See Appendix E). If the displays and controls did satisfy all three decision points in the Verification flowchart, then a "Y" was entered on the Task Analysis Worksheet in the "Suit." column (See Appendix A).
9. All HEDs generated from the Verification of Availability and Suitability of displays and controls were reviewed by the DCRDR team using the HED Assessment process described in the DCRDR Summary Report in section 1.3.

In summary, the Verification of Availability and Suitability of displays and controls followed a systematic process to compare the Information and Control requirements identified in the task analysis worksheets with the as-built RBS Instrumentation and Controls (I&C) present in the main control room. General Physics subject matter experts and human factors specialists conducted the Verification with the support of GSU startup engineering personnel and the GSU DCRDR team leader.

6.4 CONTROL ROOM SURVEY COMPLETION

On May 2, 1985, R. Liddle, D. Chase, and D. Looney completed the remaining control room survey items. The BWROG checklist items that were completed included lighting, noise levels, communications, HVAC, availability of procedures, and adequate protective clothing. The team used the same methodology for completion of these checklist items as was used in the original survey (section 1.2.2 of Summary Report).

For the lighting survey, the average readings were approximately 80 ft. candles for normal lighting and 20 ft. candles for emergency lighting. All individual readings were greater than or equal to minimum levels listed in NUREG-0700. The average noise level reading was approximately 45dB.

As a result of this survey completion effort, three HEDs (#875, 876, 877) were generated. These HEDs all relate to labeling on the remote shutdown panels and are included in the pages that follow.

In addition to the completion of the above stated items, the evaluation of several HEDs was completed. These HEDs were written during the original survey (section 7.5 of Summary Report) but were left open pending panel completion. These HEDs are included in this report and are located after the three (3) new HEDs described above.

NOTE:

Updates to the text of original HEDs are indicated as follows:

<<< Updated information >>>

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 05/02/85

HED NO.: 875

REVIEWER: LIDDLE/CHASE/LOONEY

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: NONE

CHECKLIST NO.:

PANEL/WORKSTATION NO. 1RSS-PNL102
(1.)

DESCRIPTION OF DISCREPANCY:

THE NOMENCLATURE ON LABELS IS NOT CONSISTENT WITH CONTROL ROOM LABELING.

RECOMMENDATIONS:

REVIEW NOMENCLATURE OF ALL LABELS ON THIS PANEL AGAINST RBS NOMENCLATURE CONVENTIONS AND CHANGE LABELS THAT DIFFER.

ACTION:

THE REVIEW IS COMPLETE. LABELS THAT WERE NOT CONSISTENT WITH CONVENTIONS WILL BE CHANGED.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE . / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 05/02/85

HED NO.: 876

REVIEWER: LIDDLE/CHASE/LOONEY

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: NONE

CHECKLIST NO.:

PANEL/WORKSTATION NO. 1RSS-PNL102
(1.)

DESCRIPTION OF DISCREPANCY:
THE TYPE SIZE IS NOT CONSISTENT ON ALL LABELS

RECOMMENDATIONS:
REPLACE LABELS THAT ARE NOT CONSISTENT.

ACTION:
INCONSISTENT LABELS WILL BE REPLACED.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 4

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 05/02/85

HED NO.: 877

REVIEWER: LIDDLE/CHASE/LOONEY

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: NONE

CHECKLIST NO.:

PANEL/WORKSTATION NO. 1RSS-PNL102
(1.)

DESCRIPTION OF DISCREPANCY:
LABELS HAVE WHITE LETTERS ON BLUE/RED BACKGROUND

RECOMMENDATIONS:
CHANGE LABELS TO BE CONSISTENT WITH CONTROL ROOM BENCHBOARD LABELING.

ACTION:
LABELS WILL BE CHANGED TO BE CONSISTENT WITH BENCHBOARD LABELING.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 4

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO. : 199

REVIEWER: BARKS/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: CONTROL ROOM SURVEY - NUREG 0700

CHECKLIST NO.:

GUIDELINE AREA: CONTROL ROOM WORKSPACE

PROBLEM CATEGORY: ENVIRONMENT

PROBLEM SUB-CATEGORY: ILLUMINATION

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:

THE ILLUMINATION IS SO LOW AT THE ENDS OF THE ECCS AND BOP PANELS THERE IS NO PROBLEM WITH GLARE. WHEN THIS PROBLEM IS CORRECTED THE QUESTION OF GLARE SHOULD BE EVALUATED

RECOMMENDATIONS:

REEVALUATE WHEN NEW LIGHTING IS INSTALLED

<<<THE LIGHTING SURVEY WAS COMPLETED ON 5/2/85. THE INCREASED LIGHTING LEVELS IN THE CONTROL ROOM DO NOT CREATE A GLARE PROBLEM >>>

ACTION:

NO FURTHER ACTION REQUIRED

E&DCR# P-22305
FDDR#

ISSUE DATE 01/11/85
ISSUE DATE / /

CRITICALITY RATING: 5

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 24

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A1.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. 1RSS-PNL102

(1.)

DESCRIPTION OF DISCREPANCY:

PANEL UNDER CONSTRUCTION NO LABELS

RECOMMENDATIONS:

EVALUATE LABELING AFTER PANEL CONSTRUCTION IS COMPLETE

<<<THE EVALUATION IS COMPLETE. HEDs 875,876,& 877 WERE GENERATED AS A
RESULT>>>

ACTION:

SEE ABOVE REFERENCED HEDs FOR CORRECTIVE ACTIONS AND IMPLEMENTATION SCHEDULES.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 5

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 108

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A1.4

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-74C

(1.)

PANEL/WORKSTATION NO. P863-75C

(1.)

DESCRIPTION OF DISCREPANCY:

THE PANEL HAS HOLES IN IT BECAUSE IT IS BEING RE-DESIGNED

RECOMMENDATIONS:

REASSESS AFTER COMPLETION OF RE-DESIGN

<<<PANEL WAS ASSESSED ON 5/2/85. ALL HOLES HAD BEEN COVERED. DESIGN CHANGE
PROCESS CALLS FOR HOLES TO BE COVERED WHEN AN ITEM IS REMOVED.>>>

ACTION:

NO FURTHER ACTION REQUIRED

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 5

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 31

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B2.2

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. 1RSS-PNL102
(1.)

DESCRIPTION OF DISCREPANCY:
NO PERMANENT LIGHTING INSTALLED

RECOMMENDATIONS:
INSTALL PERMANENT LIGHTING AND TAKE LIGHTING READINGS
<<<PERMANENT LIGHTING IS INSTALLED AND LIGHT READINGS WERE TAKEN ON 5/2/85 BY
R.J. LIDDLE AND D.A. CHASE. ALL LIGHT READINGS WERE ABOVE MINIMUM LIGHTING
LEVELS LISTED IN NUREG- 0700.>>>

ACTION:
NO FURTHER ACTION REQUIRED

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: S

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO. : 20

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B3.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. 1RSS-PNL101
(1.)

DESCRIPTION OF DISCREPANCY:

TIGRAPH 100 RECORDER WAS NOT EVALUATED BECAUSE IT WAS NOT OPERATIONAL

RECOMMENDATIONS:

EVALUATE WHEN OPERATIONAL

<<<THIS RECORDER WAS EVALUATED ON 5/2/85 BY R. LIDDLE, D.CHASE, AND D. LOONEY. THE APPROPRIATE CHECKLIST SECTION WAS COMPLETED AND NO HEDs WERE GENERATED AS A RESULT >>>

ACTION:

NO FURTHER ACTION REQUIRED

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE /

CRITICALITY RATING: 5

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 481

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B3.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680-1

DESCRIPTION OF DISCREPANCY:

PRINTED VALUES FOR RECORDER CHARTS ARE NOT EASILY READ AND DISTINGUISHABLE.
(N/A-STILL BEING INSTALLED.)

RECOMMENDATIONS:

EVALUATE RECORDER AFTER INSTALLATION IS COMPLETE.

<<< THESE RECORDERS WERE EVALUATED ON 5/2/85 BY R. LIDDLE, D. CHASE, AND
D. LOONEY. THE APPROPRIATE CHECKLIST SECTION WAS COMPLETED AND NO HEDS WERE
GENERATED >>>

ACTION:

NO FURTHER ACTION REQUIRED

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 5

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 94

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B3.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P863-71B
(1.)

DESCRIPTION OF DISCREPANCY:
IN SIMULATOR THE ANNULUS TEMP.RECORDER HAS THREE PENS THE CHART PAPER HAS 2
SCALES

RECOMMENDATIONS:

EVALUATE CONTROL ROOM RECORDER AFTER INSTALLATION.

<<< THIS RECORDER WAS EVALUATED ON 5/2/85 BY R. LIDDLE, D.CHASE, AND D.
LOONEY. THE APPROPRIATE CHECKLIST SECTION WAS COMPLETED. AS A RESULT, THE
RECORDER LABEL WILL BE CHANGED (PRIOR TO EXCEEDING 5% POWER) TO INDICATE A
SPARE CHANNEL.>>>

ACTION:

NO FURTHER ACTION REQUIRED

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 5

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

6.5 UPDATED INFORMATION FOR SER LISTED HEDS

This section was developed in response to Appendices A and B of the Technical Evaluation Report (attached to the staff's DCRDR SER) to provide GSU's position on each of the listed HEDs.

GSU's program for implementation of enhancement corrective actions is based on a plan to uniformly install these changes on a panel-by-panel basis. An implementation schedule of "prior to exceeding 5% power" was used to allow sufficient time for the completion of the affected panels. GSU began work on the NSSS panels first since these panels control the vital systems required for fuel load. Once the NSSS work was completed, the BOP panels within the operator controls area began, followed by the remote shutdown panels and back panels. As a result, in general, the HED corrective actions for P680, P601, and P877 shall be completed prior to fuel load. The BOP and remote shutdown panels and generic corrective actions shall be completed prior to exceeding 5% power.

The HEDs in Appendix F & G have been updated to reflect their current status, implementation schedules, and any additional information requested in the DCRDR SER. Justification or interim corrective actions are included on HEDs that have an implementation schedule that varies from the SER position. The HEDs are listed in the same order as they appear in the SER.

Appendix H contains HEDS whose implementation schedule has changed since their submittal in the DCRDR Summary Report.

6.6 MAIN CONTROL ROOM MODIFICATION VERIFICATION

The on-going human factors maintenance plan, as discussed in section 1.3.5 of the Summary Report, is in place and being implemented under an approved site procedure (PEP-0006). Changes affecting the human factors design of the main control room, including those resulting from the DCRDR, have been or will be verified to assure that the desired correction has been obtained without introducing

new HEDs. Mr. R. Liddle shall be participating in the review of corrective actions resulting from the DCRDR. To date, this review team has reviewed completed drawing markups and conventions and made plans for mockups of certain changes to assure that the anticipated corrective actions are obtained. As discussed in section 6.2.2. of this report, Mr. Liddle shall also assist GSU in verification of completed corrective actions.

APPENDIX A

TASK ANALYSIS WORKSHEET

SCENARIO A : INADEQUATE CORE COOLING

SCENARIO A: IMMEDIATE CORE COOLING

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	NO	EDP	ABEPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	SOURCE	SOURCE LOCATION		
10				OBSERVE ANNUNCIATORS	NO 02	DETERMINE PLANT STATUS	ANNUNCIATORS	ANNUNCIATOR	P680	ANN-PA, ANN-PC, ANN-BA, ANN-B5, ANN-CA	Y	Y	SME	PF
20				OBSERVE CONDENSATE PUMPS TRIPPED	NO 02		PUMP RAPS (0-300), DISCH PRESS (0-250PSIG), FLD W (0-20, 000GPM), RFP SUCTION PRESS (0-800PSIG)	INDICATION LIGHTS.	P680	ICM-PIA, ICM-PIB, ICM-PIC	Y	Y	SME, SPDS	GP
25				OBSERVE CONDENSATE SYSTEM	NO 02		PUMP RAPS (0-300) / DISCH PRESSURE (0-250PSIG) / FLOW (0-20, 000GPM) BOOSTER PUMP RAPS (0-400PSIG) / DISC H6 PRESSURE (0-800PSIG) / FLOW (0-20, 000GPM)	METERS	P680	ICM-PIA SA , P1105, P14 50, P1133, A -ICMAD07, B 07, A-HMCD 7, A-1H0L40	Y	Y	SME, SPDS	GP
30				OBSERVE FEEDWATER PUMPS TRIPPED	NO 03		RFP FLOW (0-800 LBM/HR), DISCH PRESSURE (0-1500PSIG) , SUCTION PRESSURE (0-800PSIG), TOTAL FW FLOW	INDICATION LIGHTS	P680		Y	Y	SME, SPDS	GP
40				POSITION ANNUNCIATOR ACKNOWLEDGE SWITCH	NO 05	DETERMINE PLANT STATUS	ANN/ACK CAPABILITIES	DISCRETE CONTROL	P680		Y	Y	SME	PF
50	EDP-1-3.4.1	3, 80		VERIFY REACTOR SCRAM	NO 05	ENSURE REACTOR SHUTDOWN	ROD POSITION (FULL IN) / DISCRETE INTERMEDIATE POSITIONS (FULL OUT)	CRT, DISCRETE CONTROL, INDICATION LIGHTS	P680	RMS, REAC. SYS. MODE SM, CORE MAP, RODS IN	Y	Y	SME	PF
60	EDP-1-3.4.1	80		POSITION MANUAL SCRAM BUTTONS	NO 05	INSERT REDUNDANT SCRAM SIGNAL	SCRAM CAPABILITIES	DISCRETE CONTROL	P680	RPS DIV 1, RPS DIV 2, RPS DIV 3, RPS DIV 4	Y	Y	SME	PF
70	EDP-1-3.4.1	80		MONITOR IRR'S & SRR'S	NO 06	VERIFY POWER DECREASING	REACTOR POWER (0-120M)	DISCRETE CONTROLS	P680	IRM A, E, B, F, C, G, D, & H SELECT POWER/DRIV E MODE APRM/IRM SM	Y	Y	SME, SPDS	GP

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEBU	SB EDP	REOPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	REMS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
72			REMOVE PROCEDURE FROM SF BACK	SF DESK		PROCEDURE	PRINTED MATERIAL	DESK		Y	Y	PF
73			READ PROCEDURE	SF DESK		PROCEDURE	PRINTED MATERIAL	DESK		Y	Y	PF
75	EDP-1-3.2.3	6	POSITION REIC MANUAL BOP 21 INITIATE TO ARM POSITION	BOP 21	PROVIDE WATER INJECTION SOURCE	REIC START CAPABILITIES	DISCRETE CONTROL	P601	REIC MAN. INIT.	Y	Y	PF
79			MONITOR AND CONTROL RVP WATER LEVEL	RO 05		RVP WATER LEVEL (-160 RECORDER, CRT TO +60 INCHES)		P680	C33-R608, P MS	Y	Y	SPDS GP
80	EDP-1-3.2.3	6	POSITION TO START HPMS BOP 21 SYSTEM	BOP 21	ENSURE ADEQUATE WATER SUPPLY	HPMS START CAPABILITIES	DISCRETE CONTROL, INDICATING LIGHT, METER	P601	HPMS MAN. INIT. HPMS INIT. RESET E22-R616	Y	Y	PF
90	EDP-1-3.2.1	5	INFORM CREW HPMS RUNNING	BOP 16		FLOW (0-7000GPM), VERBAL		P601		Y	Y	PF
100	EDP-1-3.2.1	5	OBSERVE ANNUNCIATOR DIESEL GENERATOR (DG) RUNNING	BOP 16	VERIFY BACKUP POWER SUPPLY	FREQ(10-100HZ), VOLTS(ANNUNCIATOR 0-5000V, AMPS(0-1200), WATTS(0-7MW), VARS(0-50KVAR)		P601	RAM-B3	Y	Y	PF
110	EDP-1-3.2.1	5	INFORMS CREW THAT HPMS BOP 16 DG IS RUNNING	BOP 16		DG RPM	VERBAL	P601	RAM-B3	Y	Y	PF
115			READS PROCEDURE ADP-1 SF DESK	SF DESK	EXECUTE SCRAM PROCEDURE	PROCEDURE	PRINTED MATERIAL	DESK		Y	Y	PF
120	EDP-1-3.2.3	6	POSITION OPEN THE HPMS BOP 16 PUMP INJECT SHUT OFF VALVE	BOP 16	PROVIDE INJECTION PATH	HPMS INJECTION CONTROL	DISCRETE CONTROL	P601	E22B-F00A	Y	Y	PF
130			OBSERVE HPMS FLOW	BOP 16		HPMS FLOW(0-7000GPM) METER		P601	E22-R603	Y	Y	SPDS GP
140			INFORM CREW HPMS INJECTION VALVE FAILED TO OPEN	BOP 16	EVALUATE LACK OF INJECTION	INJECTION VALVE	VERBAL	P601		Y	Y	PF
150			OBSERVE VALVE INDICATIONS FOR HPMS	BOP 16		INJECTION VALVE	DISCRETE CONTROL	P601	E22B-F00A	Y	Y	PF
160	EDP-1-3.2.3.3	4, 15	OBSERVE REACTOR WATER RO 05/03 LEVEL AND PRESSURE	RO 05/03		REACTOR PRESSURE (0-1200PSIG) AND LEVEL (-160 TO +60 IN)	CRT/METERS	P680	PMS	Y	Y	SPDS PF

SCENARIO A: INADEQUATE CORE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	NO	EDP	REQ#	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL	SUIT	SOURCE	SOURCE LOCATION
170	EDP-1			OBSERVE RHR SYSTEM LINE-UP	BDP 20	DETERMINE RHR SYSTEM SP SUCT, HI IN/OUT/BYP, INJ SHUTOFF, INJECTION,	INDICATING LIGHTS	PF	P601	1E12-F042B 1E12-F044A	Y	Y	SME	PF
171				HOLDS PROCEDURE	SF TYPER	PROCEDURE	PRINTED MATERIAL	PF	TYPER		Y	Y	SME	PF
180	EDP-1-3.2.1	5		INFORM BDP TO START LPS	SF 21	ENSURE ADEQUATE WATER SUPPLY	PROCEDURE	VERBAL	P601		Y	Y	SME	PF
190	EDP-1-3.4.2	36		VERIFY TURBINE TRIP	BD 07	TURB STOP/CONTROL VALS, MECH/ELEC TRIP VALS, LOAD BREAKER, EXCITER FIELD BREAKER, GEN LOCKOUT RELAY	DIGITAL DISPLAY	PF	P680	1TMB-J1110	Y	Y	SME	PF
200	EDP-1-3.2.1	5		INITIATE LPS	BDP 21	ENSURE ADEQUATE WATER SUPPLY	LPS CAPABILITIES	DISCRETE CONTROL	P601	LPS MON. INIT.	Y	Y	SME	PF
210	EDP-1-3.3.1	16		INFORMS CREW OF SRV INITIATION	BD 19	DISCHG LINE TEMP (0-600F)	INDICATOR LIGHT	VERBAL	P680	SRV	Y	Y	SME	PF
220				DIAGNOSE WITH SHIFT SUPERVISOR AVAILABILITY OF VESSEL INJECTION	SF 19	VERBAL	VERBAL	PF	P680		Y	Y	SME	PF
240				OBSERVE LPS PUMP TRIP	BDP 21	FLOW (0-7000GPM), AMPS INDICATING (0-300), LPS PUMP STATUS	INDICATING LIGHTS, METER	PF	P601	E21-C001 E21-R600 1F21-C001	Y	Y	SME, SPWS	GP
250				INFORM CREW OF LPS PUMP TRIP	BDP 21	VERBAL	VERBAL	PF	P601		Y	Y	SME	PF
260				OBSERVE RHR B PUMP	BDP 17	VERIFY OPERABILITY (0-300)	FLOW (0-8000GPM), AMPS INDICATING (0-300)	INDICATING LIGHT	P601	E12-C002B	Y	Y	SME, SPWS	GP
265	EDP-1-3.2.3	6		INFORM BD TO START CRD PUMP	SF 22	PROVIDE ADDITIONAL WATER SUPPLY	CRD CAPABILITIES	VERBAL	P601		Y	Y	SME	PF
270	EDP-1-3.2.3	6		POSITION TO START CRD PUMPS	BD 22	PROVIDE ADDITIONAL WATER SUPPLY	FLOW (0-1000GPM), AMPS (0-100), CRD WTR PRESS (0-2500PSIG)	DISCRETE CONTROL	P601	C11-P01A C11-P01B	Y	Y	SME	PF
280	EDP-1-3.2	4		OBSERVE REACTION WATER LEVEL	BDP 20	DETERMINE REACTION CORE COVERAGE	RW WATER LEVEL (1-160 REORDER TO +60 INCHES)	PF	P601	B21-R623A	Y	Y	SPWS	GP
290				INFORM CREW OF PLANT STATUS	BDP 20	VERBAL	VERBAL	PF	P601		Y	Y	SME	PF

SCENARIO A: INADEQUATE CORE COOLING

RIVER BEND STATION TSSA ANALYSIS WORKSHEET

SEQ#	REQ	REQ#	REQ#	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	NEWS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
300	EDP-1-3.4.1	60	05	VERIFY ALL RODS IN	RD 05	TO DETERMINE THE REACTOR HAS SCRAMMED	ROD POSITION/FULL IN/DISCRETE INTERMEDIATE POSITIONS/FULL OUT)	DISCRETE CONTROL	P680	RODS IN	Y	Y SNE	PF
310			SF 22	INFORMS SHIFT SUPERVISOR OF PLANT STATUS			VERBAL	VERBAL	P601		Y	Y SNE	PF
320	EDP-1-3.2.3	6	03	REQUEST MANUALLY OPEN BOP DESK HAS INJECTION VALVE	BOP DESK	TO INJECT WATER INTO VALVE'S MANUAL CONTROL CAPABILITIES	CPT'S		DESK		Y	Y SNE	PF
322			SF DESK	REMOVE PROCEDURE FROM SF DESK		PROCEDURE	PRINTED MATERIAL		DESK		Y	Y SNE	PF
323			SF DESK	READ PROCEDURE		PROCEDURE	PRINTED MATERIAL		DESK		Y	Y SNE	PF
325			SF 22	INSTRUCT BOP TO HAVE RUL. BUILDING OPERATOR TO PLACE RPS IN ALTERNATE		TO REGAIN POWER TO RPS	VERBAL		P601		Y	Y SNE	PF
330	EDP-1-3.2	4	03	DISCLOSES REACTOR WATER LEVEL	RD 03	TO DETERMINE STATUS OF REACTOR CORE TO +60 INCHES)	RDV WATER LEVEL (-160 METER TO +60 INCHES)		P680	C13-R608	Y	Y SPDS	GP
340			RD 17	INFORM CREW LEVEL ON FUEL ZONE INDICATOR		DETERMINE CORE COVERAGE TO +50 INCHES)	RD WATER LEVEL (-150 METER TO +50 INCHES)		P601	B21-RS10	Y	Y SPDS	GP
350			SF 18	INFORM SHIFT SUPERVISOR OF PLANT STATUS			VERBAL		P601		Y	Y SNE	PF
360	EDP-1-3.2.3	6	05	INSTRUCT RD TO START CONDENSATE AND FEEDWATER PUMPS	SS DESK	RESTORE NORMAL WATER FLOW/COND PUMPS CONTROL CAPABILITIES AND STATUS	VERBAL		P680		Y	Y SNE	PF
370	EDP-1-3.2.3	6	02	ATTEMPT TO START CONDENSATE	RD 02	PROVIDE WATER TO THE SYSTEM START VESSEL	DISCRETE CONTROLS		P680	ICM-P1A,B Y & C	Y	Y SNE	PF
380			RD 03	REQUEST SHIFT SUPERVISOR TO HAVE RD RESET BREAKERS		INSURE POWER TO ELECTRICAL SUPPLY PUMPS	VERBAL		P680		Y	Y SNE	PF
390			RD 03	INFORM SHIFT SUPERVISOR OF PLANT STATUS			VERBAL		P601		Y	Y SNE	PF
395			BOP 20	POSITION ANNUNCIATOR KNOWLEDGE SWITCHES		DETERMINE PLANT STATUS	ANN/ACK CAPABILITIES DISCRETE CONTROL		P601	ANN/ACK	Y	Y SNE	PF

SCENARIO A: INADEQUATE CORE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	RD EDP	REQ#	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
400			REQUEST REQ TO VISUALLY INSPECT CONDENSATE PUMPS	SS DMS	DETERMINE CAUSE OF PUMP TRIP	COMMUNICATION CAPABILITY	CPTS	DMS		Y	Y SNE	PF
410			OBSERVE LKCS STATUS	BDP 21	DETERMINE SYSTEM AVAILABILITY	SP SUCT, TEST RTN TO INDICATING SP, MAIN FLOW TO LIGHTS SP, INJ SHUTOFF, PUMP		P601		Y	Y SPDS	GP
415	EDP-1-3.2	4	OBSERVE REACTION WATER LEVEL	BDP 17	TO DETERMINE IF CORE REACTION WATER IS UNCOVERED	LVL 1-150 TO +60 INCHES, 1-160 TO +60 INCHES	METER	P601	B21-B610	Y	Y SPDS	GP
418			REMOVE PROCEDURE FROM SF DESK	SF DESK		PROCEDURE	PRINTED MATERIAL	DESK		Y	Y SNE	PF
420			POSITION ANNUNCIATOR ACKNOWLEDGE SWITCH	BDP 52	DETERMINE PLANT STATUS	ANN/ACK CAPABILITIES	DISCRETE CONTROL	P670	ANN/ACK	Y	Y SNE	PF
424			READ PROCEDURE	SF DESK		PROCEDURE	PRINTED MATERIAL	DESK		Y	Y SNE	PF
430			POSITION ANNUNCIATOR ACKNOWLEDGE SWITCH	BDP 73	DETERMINE PLANT STATUS	ANN/ACK CAPABILITIES	DISCRETE CONTROL	P663	ANN/ACK	Y	Y SNE	PF
440	EDP-2-3.1.1	53	OBSERVE STATUS OF DRYWELL COOLERS	BDP 72	DETERMINE PLANT STATUS	IN COOLER SYSTEM STATUS	INDICATING LIGHTS	P663	HAC-A005C, HAC-A0013 E	Y	Y SNE	PF
445			POSITION CONDENSATE PUMP DISCHARGE TO CLOSED	BD 02		SYSTEM CAPABILITIES	DISCRETE CONTROL	P680		Y	Y SNE	PF
450			POSITION ANNUNCIATOR ACKNOWLEDGE SWITCH	BDP 85	DETERMINE PLANT STATUS	ANN/ACK CAPABILITIES	DISCRETE CONTROL	P608	ANN/ACK	Y	Y SNE	PF
460			INFORM SHIFT SUPERVISOR OF REACTION WATER LEVEL	BD 03		REACTION WATER LEVEL 1-150 TO +50 INCHES, 1-160 TO +60 INCHES	VERBAL	P680		Y	Y SPDS	GP
470	EDP-7-2.2	151	INFORM SHIFT SUPERVISOR TO USE STEAM COOLING	SF DMS	DECIDES TO USE STEAM COOLING	VERBAL	VERBAL	DMS		Y	Y SNE	PF
480			RECEIVE INFORMATION ON SS HPICS INJECTION VALVE	SS DMS		VERBAL	CPTS	DMS		Y	Y SNE	PF
490			OBSERVE PLANT STATUS	BD 06	TO DETERMINE PLANT STATUS	PLANT STATUS	CRT	P680	DMS	Y	Y SNE	PF

SCENARIO A: INADEQUATE CORE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	OB EDP	REQ#	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
500			DEFINES WHICH PROCEDURE IS APPLICABLE	SF DESK	TO BRING PLANT TO SAFE CONDITION	PROCEDURE	PRINTED MATERIAL	DESK		Y Y SNE	PF	
502			READ PROCEDURE	SS TYPER		PROCEDURE	PRINTED MATERIAL	DESK		Y Y SNE	PF	
510			REQUESTS AND TO TRANSFER RPS TO ALTERNATE SUPPLY	BOB DMS	TO ALLOW FOR STARTING OF SYSTEMS AND MONITORING OF REACTOR POWER	COMMUNICATION CAPABILITY	PHAS	DMS		Y Y SNE	PF	
520	EDP-1-3.2	4	REQUESTS INFORMATION ABOUT REACTOR WATER LEVEL	SS DESK	DETERMINE RELATIONSHIP TO PROCEDURES	VERBAL	VERBAL	DESK		Y Y SNE	PF	
530			POSITION ANNUNCIATOR ROOM/EDGE SWITCHES	BO OS		ANN/ROX CAPABILITIES DISCRETE CONTROL		PG60	ANN/ROX	Y Y SNE	PF	
540	EDP-1-3.4.1	80	OBSERVE NUCLEAR POWER DECREASE	BO OS	TO VERIFY REACTOR IS MOVING TO A SAFE CONDITION	RECORDERS		PG60	CSI-8603A, B, C, & D	Y Y SPOS	BP	
550			DIVERTISE LOSS OF CONDENSATE PUMP AND STEADY-OPEN RELIEF VALVE	SF 22	TO DETERMINE COURSE OF ACTION	SUPPRESSION POOL TEMP (0-200F) / LEVEL (1 & - 22FT) PUMP FLOW (0-20,000GPM)	VERBAL	PG01		Y Y SNE, SPOS	BP	
560			POSITION INWARD AND OUTWARD ISOLATION RESET	BOB 19	RESET CONTAINMENT ISOLATION	RESET CAPABILITY AND DISCRETE STATUS	DISCRETE CONTROLS	PG01	OUTRD. ISOL. RESET, INBD. ISOL. RESET	Y Y SNE	PF	
560			REQUEST AND TO INVESTIGATE STATUS OF RHR AND LACS PUMPS	BOB DMS	TO PROVIDE EMERGENCY COMMUNICATION INJECTION		PHAS	DMS		Y Y SNE	PF	
570			DETERMINE PLANT STATUS BOB 17	BOB 17	TO DETERMINE PLANT STATUS	PLANT STATUS	ANNUNCIATOR	PG01		Y Y SNE	PF	
575			INFORM SHIFT SUPERVISOR OF DRYWELL AND RVP PRESSURE	BO OS	TO ALLOW SHIFT SUPERVISOR TO MAKE DECISION BASED ON PROCEDURES	DRYWELL PRESSURE (0-SUPRA), R PRESSURE (0-1200PSIG)	CRT	PG60	PHS	Y Y SPOS	BP	
580	EDP-1		DIAGNOSE STATUS OF ADS AND SRA'S	BOB 19	ENSURE RVP PRESSURE RELIEF CAPABILITY	ADS/SRV STATUS	INDICATOR LIGHTS	PG01	B21-F0510	Y Y SNE	PF	

SCENARIO A: INADEQUATE COOLING

RIVER BEAD STATION TSSA ANALYSIS WORKSHEET

SEQ#	NO	EDP	REQ#	TSSA/SUBTSSA	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
590	EDP-1-3.3	15	INFORM CREW OF RVP PRESSURE INCREASING	RD 05		RVP PRESS (0-1200PSIG)	CRT	P680	PMS	Y	Y	SPDS	GP
600	EDP-1-3.3.2	17	DECIDE TO OPEN SHV TO SF BE -PRESSURIZE	SF 19	TO RELEASE PRESSURE FROM RVP	RVP PRESS (0-1200PSIG)	JPN	P601		Y	Y	SPDS	GP
610	EDP-1-3.3.2	17	POSITION OPEN SHV	BDP 19		SHV CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P601	BZ1-F041D	Y	Y	SPDS	GP
620	EDP-2-3.3	42	OBSERVE DRYWELL INDICATION	SS 63/84	TO DETERMINE RELATIONSHIP BETWEEN TEMP (0-446F), PRESS (0-50PSIA), HUMIDITY, AND DIATION LEVELS (1.0 TO 1027 R/Hr), DRYWELL/CONT. DIFFERENTIAL PRESS (1-15 TO +30PSID)	DRYWELL RECORDERS	P608		10MS-P821, Y AR25A, TRNA 2A, TRN42B	Y	Y	SME, SPDS	GP
630			INFORM SHIFT FOREMAN THAT HPCS IS INJECTING	BDP 15		PUMP FLW (0-7000GPM), OUTP UT PRESS	VERBAL	P601		Y	Y	SME, SPDS	GP
640	EDP-1-3.3.2	17	POSITION CLOSE SHV	BDP 19	TO INCREASE PRESSURE SHV CONTROL IN RVP	SHV CONTROL CAPABILITIES	DISCRETE CONTROL, INDICATOR LIGHT	P601	BZ1-F041D	Y	Y	SME	PF
650			INFORM RD INDICATION SHOULD BE ON WIDE RANGE LEVEL RECORDER	BDP 20		RVP WATER LEVEL (1-160 METER TO +60 INCHES)		P601	BZ1-BZ10	Y	Y	SPDS	GP
660			DIAGNOSE PLANT INDICATIONS	SF1 01	TO DETERMINE NEXT STEP	PROCEDURES	PRINTED MATERIAL	P680		Y	Y	SME	PF
670			INFORM CREW CONDENSER VACUUM IS AT 24 INCHES OF HG.	BDP 02		CONDENSER VACUUM (0 - NOTORS 30 INCHES HG VACUUM)		P680	10MS-P145A Y, 10MS-P145 B	Y	N	SME	PF
680			OBSERVE LEAKAGE CONTROL	BDP DMS	TO DETERMINE LOCATION OF LEAK	LEAKAGE CONTROL SYSTEM	CRT	DMS	DMS	N	N	SME	PF
690	EDP-2-3.3	92	DIAGNOSE DRYWELL TEMPERATURE	SS 06	TO DETERMINE RELATIONSHIP TO TECH SPEC	DRYWELL TEMP (0-446F)	CRT	P680	PMS	Y	Y	SPDS	PF
700	EDP-1-3.2	4	INFORM SHIFT FOREMAN RVP LEVEL IS 150 AND STATUS OF PLANT	BDP 18	TO RESET AND UN-ISOLATE RVP	RVP WATER LEVEL (1-160 VERTICAL TO +60 INCHES)		P601		Y	Y	SPDS	PF

SCENARIO A: INADEQUATE CORE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEID	RB EDP	RHEPG	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
710			RECEIVE FROM RVD INFORMATION ON RHR PUMP	SS	DIMS	COMMUNICATION CAPABILITY	PMS	DIMS		Y	SME	PF
720			OBSERVE RHR A PUMP RUNNING	BOP	20	PUMP FLOW(0-8000GPM), AMPS LIGHT, DISCRETE (0-300),	INDICATION PMS01	E12-C002A	Y	Y	SME, SPDS	PF
725			INFORM CREW RHR PUMP RUNNING	BOP	20	RHR PUMP STATUS	VERBAL	PMS01		Y	SME	PF
730			POSITION TO CLOSE RHR A INJECTION VALVE	BOP	20	TO DECREASE INJECTION TO RPV	INDICATION LIGHT, DISCRETE CONTROL, METER	PMS01	E12-F042A, E12-H603A	Y	SME	PF
740			OBSERVE RHR SYSTEM STATUS	BOP	20	PUMPS STATUS INJ SHUTOFF/INJECTION/SU PRESSION POOL SUCT/HI IN/OUT/BYP/MIN FLOW VALVES STATUS, PUMP FLOW(0-8000GPM)	INDICATION LIGHTS	PMS01		Y	SPDS	PF
760	EDP-1-3.3	15	INFORM CREW RPV PRESSURE DECREASING	SS	03	RPV PRESS(0-1200PSIG)	VERBAL	PMS01		Y	SPDS	PF
770	EDP-1		OBSERVE DRYWELL PRESSURE	SS	83	DRYWELL PRESS(0-50PSIA)	RECORDER	PMS01	10MS-P02A	Y	SPDS	PF
780			POSITION TO CLOSED HPCS INJECTION VALVE	BOP	16	TO DECREASE VESSEL INJECTION	DISCRETE CONTROL CAPABILITY AND STATUS	PMS01	E22A-F004	Y	SME	PF
790			POSITION TO CLOSED RHR BOP "A" HI SHELL SIDE BYPASS	BOP	20	PREPARE TO CHANGE RHR MODE	DISCRETE CONTROL, METER	PMS01	E12-F062A, E12-H603A	Y	SME	PF
800			OBSERVE CSD SYSTEM	SS	22	VERIFY OPERABILITY OIL PUMPS, CSD PUMPS, ISOL VALVE, DRIVE MTR/COOLING MTR PCV's, PUMP AMPS(0-100), CHARGING WATER PRESSURE (0-2500PSIG) , FLOW(0-100GPM)	INDICATION LIGHTS	PMS01		Y	SME	PF
810			DIRECTOR RPV STATUS	SF	05	RPV PRESS(0-1200PSIG), LE VEL(1-160 TO +60 INCHES) & REACTOR	CRT	PMS01	PMS	Y	SPDS	PF

SCENARIO A: INADEQUATE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SECU	RD EDP	RIEPIG	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL. SUIT	SOURCE	SOURCE LOCATION
820	EDP-1-3.3	15	INSTRUCT RD TO INFORM SS SHIFT SUPERVISOR IF RPV PRESSURE IS ABOVE 100 POUNDS	SS 05		RPV PRESS(0-1200PSIG)	VERBAL	PA680		Y	SPDS	PF
830	EDP-2-3.3.2	87	INFORM CREW RHR A LOOP BOP IS IN SUPPRESSION POOL COOLING	BOP 20	REDUCE SUPPRESSION POOL TEMPERATURE	RHR/SERVICE WATER PUMP STATUS SUPPRESSION POOL SUCTION RHR TEST LINE/RH (INLET/OUTLET/BYPASS)/SERVICE WATER TO RHR VALVE STATUS RH INLET/OUTLET TEMP(0-600F), SERVICE WATER FLOW TO RH, SUPPRESSION POOL TEMP(0-200F)	VERBAL	PA601		Y	SNE	PF
840	EDP-1-3.2	4	INFORM SHIFT FOREMAN BOP LEVEL	BOP 17		REACTOR WATER LEVEL (-160 TO +60 INCHES)	VERBAL, METER	PA601	821-8605	Y	SPDS	PF
850	EDP-1-3.2	4	OBSERVE REACTOR WATER RD LEVEL	RD 03		REACTOR LEVEL (-160 TO +60 INCHES)	METER	PA680	C33-8606A, Y C33-8606B, C33-8606C	Y	SPDS	PF
860			DISCUSS PLANT STATUS WITH SHIFT SUPERVISOR	SF DESK		VERBAL	VERBAL	DESK		Y	SNE	PF
870	EDP-2		OBSERVE DRYWELL PRESSURE	SS 83/84		DRYWELL PRESS(0-50PSIA)	REORDER	PA608	10MS-PR2A	Y	SPDS	PF
880	EDP-2-3.3	92	OBSERVE DRYWELL TEMPERATURE INDICATOR	SS 06		DRYWELL TEMP(0-446F) CRT		PA680	PMS	Y	SPDS	PF
890			OBSERVE PLANT STATUS	BOP 17	TO ENSURE STABLE CONDITIONS	RPV PRESS(0-1200PSIG) & INDICATING LEVEL (-160 TO +60 INCHES), REACTOR POWER(0-120X)	MAN & LIGHTS	PA601		Y	SPDS	PF
930			DISCUSS PROCEDURES WITH SHIFT SUPERVISOR	SF DESK		PROCEDURE	PRINTED MATERIAL	DESK		Y	SNE	PF
940	EDP-2-3.3	92	OBSERVE DRYWELL TEMPERATURE T _{IND}	BOP 06		DRYWELL TEMP(0-446F) CRT		PA680	PMS	Y	SPDS	PF
950	EDP-1-3.3.2	17	INFORM BOP TO OPEN ONE SRV	SS 19	TO DECREASE REACTOR PRESSURE	VERBAL	VERBAL	PA601	SIN'S	Y	SNE	PF

SCENARIO A: INADEQUATE CORE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SECU	RB EDP	REPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
960	EDP-1-3.3.2	17	POSITION TO OPEN SRV	BDP 13		SRV CONTROL CABILITY AND STATUS	DISCRETE CONTROL	PA601	B21-F041B	Y	SPDS	PF
970	EDP-1-3.3	15	MONITOR REACTOR PRESSURE	RD 04		RT PRESSURE (0-1200PSI6)	METER, CRT	PA680	C33-R608, PMS	Y	SPDS	PF
980	EDP-1-3.3	15	MONITOR REACTOR PRESSURE	BDP 17		RT PRESS (0-1200PSI6) RECORDER		PA601	B21-R623B	Y	SPDS	PF
990			DISCUSS PLANT CONDITION WITH SHIFT SUPERVISOR	SF DESK		VERBAL	VERBAL	DESK		Y	SME	PF
1000	EDP-1-3.2	4	REQUEST LEVEL INFORMATION FROM RD	SS DESK	TO DETERMINE PLANT STATUS IN RELATIONSHIP TO PROCEDURES	VERBAL	VERBAL	DESK		Y	SME	PF
1005			INFORM SHIFT SUPERVISOR OF REACTOR LEVEL	RD 03		REACTOR WTR LVL (-160 TO +60 INCHES)		PA680	C33-R608	Y	SPDS	PF
1010	EDP-1-3.3	15	REQUEST PRESSURE INFORMATION FROM BDP OPERATOR	SS DESK	TO DETERMINE PLANT STATUS IN RELATIONSHIP TO PROCEDURES	VERBAL	VERBAL	DESK		Y	SME	PF
1020			INFORM SHIFT SUPERVISOR OF REACTOR WATER LEVEL AND PRESSURE STATUS	BDP 17		REACTOR LVL (-160 TO +60 INCHES) AND PRESS (0-1200PSI6)		PA601	B21-R623B	Y	SPDS	PF
1030	EDP-2		OBSERVE DRYWELL INDICATIONS	SF 06		DRYWELL TEMP (0-446F), PRESS (0 -50PSIA), HUMIDITY, RA DIATION (1.0 TO 1E7 R/HR)	CRT	PA680	PMS	Y	SPDS	PF
1040			REQUEST DRYWELL TEMPERATURE INFORMATION FROM RD	SS 06	TO DETERMINE STATUS OF PLANT RELATIONSHIP TO PROCEDURES	DRYWELL TEMP (0-446F) CRT		PA680	PMS	Y	SPDS	PF
1050	EDP-2-3.3	92	INFORM SHIFT SUPERVISOR OF DRYWELL TEMPERATURE	RD 06		DRYWELL TEMP (0-446F) CRT		PA680	PMS	Y	SPDS	PF
1060	EDP-2-3.3	92	OBSERVE DRYWELL TEMPERATURE TREND	SS 83		DRYWELL TEMP (0-446F) RECORDER		PA608	ICMS-TRYA2 A	Y	SPDS	PF

SCENARIO A: INADEQUATE CORE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	RB	EDP	RDEPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
1070				DISCUSS ALTERNATE SUCCESS PATHS WITH SHIFT FOREMAN	SS DESK		PROCEDURE	PRINTED MATERIAL	DESK		Y	Y	PF
1080	EDP-2-3.3	92		MONITOR DRYWELL TEMPERATURE	BOP 06		DRYWELL TEMP (0-446F) CRT/METER		P680	PMS	Y	Y	SPDS PF
1090	EDP-2-3.3.1	107		DECIDE TO START HYDROGEN MIXING SYSTEM	SF 06	MIX DRYWELL/CONTAINMENT ATMOSPHERE	DRYWELL HYDROGEN CONCENTRATION (0-10% HYDROGEN) CRT		P680	PMS	Y	Y	SPDS PF
1100				POSITION TO OPEN DRYWELL HYDROGEN MIXING ISOLATION VALVES	RO 71		ISOLATION VALVES CONTROL CAPABILITY STATUS DISCRETE		P663	ICPM-MOV4A Y ICPM-MOV2A	Y	Y	PF
1110				OBSERVE DRYWELL ACTIVITY	BOP DMS		RADIATION LEVEL (1E-11 TO 1E-1 CI/CC) CRT		DMS	DMS	Y	Y	SPDS PF
1120				INFORM SHIFT FOREMAN THAT DRYWELL ACTIVITY INCREASING	SS DMS		RADIATION LEVEL (1E-11 TO 1E-1 CI/CC) CRT		DMS	DMS	Y	Y	SPDS PF
1130	EDP-2-3.3.3.5	92, 15		INFORM CREW OF DRYWELL RO 05 PRESSURE AND TEMPERATURE	RO 05		DRYWELL TEMP (0-446F) CRT & PRESS (0-50PSIA)		P680	PMS	Y	Y	SPDS PF
1140				REQUEST BOP TO ATTEMPT SF TO RESET INBOARD AND OUTBOARD ISOLATIONS	SF 05		VERBAL	VERBAL	P680		Y	Y	SME PF
1150				POSITION INBOARD AND OUTBOARD ISOLATIONS RESETS	BOP 19	VERIFY RESET	RESET CAPABILITIES DISCRETE CONTROLS		P601	INBD & OUTBD ISOL. RESETS	Y	Y	SME PF
1160				REQUEST AND TO RESET SUPPLY BREAKER FOR RPS A	BOP DMS		COMMUNICATION CAPABILITY	PPAS	DMS		Y	Y	SME PF
1170				INFORM CREW RPS A IN SERVICE	BOP 19		VERBAL	VERBAL	P601		Y	Y	SME PF
1180				REQUEST AND TO PUT RPS B IN ITS ALTERNATE POWER SUPPLY	BOP DMS		COMMUNICATION CAPABILITY	PPAS	DMS		Y	Y	SME PF
1190	EDP-1-3.4	33		OBSERVE APRM STATUS LIGHTS	BOP 05/06		APRM STATUS INDICATOR LIGHTS		P650	APRM MATRIX	Y	Y	SME PF

SCENARIO A: INADEQUATE CORE COOLING

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEBU	RB EDP	ROE/PS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
1200	EDP-2		OBSERVE DRYWELL PRESSURE	NO 05		DRYWELL PRESS(10-50PSIA)	CRT	P680	DMS	Y	SPDS	PF
1210	EDP-2-3.3.1	93	POSITION OPEN CONTAINMENT UNIT COOLERS AND DRYWELL UNIT COOLERS A	BOP 55		DRYWELL/CONTAINMENT UNIT COOLERS CONTROL CAPABILITY AND STATUS	DISCRETE	P870	15MP-MOV50 Y 2A, 503A, 4A, 5A	Y	SNE	PF
1220	EDP-2-3.3.1	93	POSITION OPEN "B" CONTAINMENT UNIT COOLERS AND "B" DRYWELL UNIT COOLERS	BOP 56		DRYWELL/CONTAINMENT UNIT COOLERS CONTROL CAPABILITY AND STATUS	DISCRETE	P870	15MP-MOV50 Y 2B, 503B, 4B, 5B,	Y	SNE	PF
1230	EDP-2-3.3.1	93	POSITION TO ON DRYWELL BOP UNIT COOLER FAN	BOP 71		DRYWELL UNIT COOLER FAN CONTROL CAPABILITY AND STATUS	DISCRETE	P863	10MS-VCID	Y	SNE	PF
1240			DETECT VENTILATION ALARM	SF 06		ANNUN	ANNUNCIATOR	P680	ANN	Y	SNE	PF
1250			INSTRUCT RD TO SHUT HYDROGEN-MIXING	SF 72		VERBAL	VERBAL	P863		Y	SNE	PF
1270			POSITION TO CLOSE INBOARD AND OUTBOARD ISOLATION VALVES FOR HYDROGEN MIXING	RD 71	TO ISOLATE DRYWELL FROM CONTAINMENT	ISOLATION VALVE CONTROL CAPABILITY AND STATUS	DISCRETE	P863	10MP-MOV44 Y & 2A	Y	SNE	PF
1280			OBSERVE ANNUNCIATORS FOR OFF GAS SYSTEM	SF 00		ANNUN	ANNUNCIATORS	P845	ANN	Y	SNE	PF
1290			MONITOR CONTAINMENT RADIOACTIVITY	BOP DMS		RADIOACTIVITY LEVELS(1.0 TO 1E7 R/HR)	CRT	DMS	DMS	Y	SPDS	PF
1300			DISCUSS METHOD TO OBTAIN SHUTDOWN CONDITION	SS 05		VERBAL	VERBAL	P680		Y	SNE	PF
1310			OBSERVE ELECTRICAL SYSTEM CONDITION	BOP 88		BREAKER STATUS	INDICATOR LIGHTS, INDICATOR FLAG	P808	BREAKER POSITION	Y	SNE	PF
1320	EDP-2-3.3.3.5	92	OBSERVE DRYWELL TEMPERATURE AND PRESSURE	NO 63		DRYWELL TEMP(10-446F) RECORDERS AND PRESS(10-50PSIA)		P808	10MS-PR2A, Y 10MS-TRY42 A	Y	SPDS	PF
1330	EDP-1-3.3.7	19	DECIDES TO PLACE RHR IN SHUTDOWN COOLING	SS 06	TO COOL DOWN RHR	VERBAL	VERBAL	P680		Y	SNE	PF

SCENARIO A: INADEQUATE CORE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEBU	RB EDP	RBCPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	REMS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
1340			POSITION TO OPEN RECIRC HYDRAULIC POWER ISOLATION VALVES	SF 81		HPU ISOLATION VALVES DISCRETE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROLS	P608	1RCS-MOV61 Y A, 618, 600, 608, 596, 59 B, 580, 578B	Y	SME	PF
1350			POSITION TO RUN RECIRC SF HYDRAULIC PUMPS	00	TO RECOVER FROM ISOLATION	HPU PUMPS CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P614	HPU	Y	SME	PF
1360			POSITION TO OPEN CONTAINMENT INSTRUMENT AIR ISOLATION	BOP 55		CONT INST AIR ISOL CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P870	11AS-MV10 Y 6	Y	SME	PF
1370			POSITION TO OPEN RTM TO PFC ON PUMPS CONTAINMENT OUTBOARD ISOLATION	BOP 55		ISOLATION VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P870	15FC-MV12 Y 1	Y	SME	PF
1380			INFORM SHIFT SUPERVISION STATUS OF CONTAINMENT DRYWELL SUMPS	BOP DWS		HANNA, DRYWELL SUMP WATER LEVEL (5-250MM)	VERBAL	DWS	DWS	Y	SPDS	PF
1390	EDP-2		DIAGNOSE WITH RD DRYWELL PRESSURE	SF 05		DRYWELL PRESS (0-50PSIA)	CRT	DWS	DWS	Y	SPDS	PF
1410	EDP-1, 3, 3.7	19	INFORM BOP TO TAKE RHR A OUT OF SUPPRESSION POOL COOLING AND INTO SHUTDOWN COOLING	SF 22		VERBAL	VERBAL	P601	RHR VALVE AND PUMP INDICATOR LIGHTS	Y	SME	PF
1420			POSITION TO TRIP SUPPLY BREAKERS	SF 87 88		SUPPLY BAKR CONTROL CAPABILITY AND STATUS	DISCRETE CONTROLS, INDICATOR LIGHTS, INDICATOR FLUGS	P606	SUPPLY BREAKERS	Y	SME	PF
1430			POSITION TO CLOSE RHR A TEST RETURN TO SUPPRESSION POOL	BOP 20		TEST RETURN VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P601	E12-F024A Y	Y	SME	PF
1440			POSITION TO OPEN RHR A BOP SHELL SIDE BYPASS VALVE	BOP 20		BYPASS VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P601	E12-F048A Y	Y	SME	PF
1450			COMPARE TEMPERATURES ON RECIRC SYSTEM	RD 00	TO DETERMINE IF RECIRC CAN BE STARTED PER PROCEDURES	RECIRC LOOPS A/B TEMP (0-600F)	RECORDER	P614	B21-R643 Y	Y	SME	PF

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SECU	RB EDP	RBEPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT AVAIL NUMBER	SUIT	SOURCE	LOCATION
1460			INFORM SF NEED TO STOP BOP AND RESTART RHR A PUMP	DMS		VERBAL	VERBAL	DMS		Y	SME	PF
1470			INFORM BOP TO LOOK AT SF PROCEDURE BOP-3	SF DMS		PROCEDURE	VERBAL	DMS		Y	SME	PF
1475			INFORM SHIFT FOREMAN SS 06 TO TURN OFF A DRYWELL UNIT COOLER	SS 06		VERBAL	VERBAL	PA60		Y	SME	PF
1480			POSITION TO OFF DRYWELL UNIT COOLER	SF 71		DRYWELL COOLER CONTROL CAPABILITY AND STATUS	DISCRETE	PA63	10MS-VCIE	Y	SME	PF
1490			CALCULATE RECIRC SYSTEM DELTA-T'S FOR RESTART OF RECIRC SYSTEM	RD DMS	CONFIRMANCE WITH PROCEDURAL REQUIREMENTS	RECIRC LOOP TEMP(0-500F), RI BOTTOM HEAD DRAIN TEMP(0-500), RI STEAM DOME TEMP(0-1200PSI)	REDUCER	DMS	LOOP TEMP	Y	SME	PF
1500			REQUEST AND TO RESET NORMAL SUPPLY BREAKER TO RPS CHANNEL B	BOP DMS		COMMUNICATION CAPABILITY	PAAS	DMS		Y	SME	PF
1510			POSITION TO RESET SUPPLY BREAKER	BOP 32		SUPPLY BOP CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT, INDICATOR FLAG	PA77	1MS-MCC10 2B	Y	SME	PF
1520			RECEIVE FROM AND RPS CHANNEL B ON NORMAL POWER SUPPLY	BOP DMS	VERIFY POWER SUPPLY	COMMUNICATION CAPABILITY	PAAS	DMS		Y	SME	PF
1530	EDP-2		INFORM CREW THAT DRYWELL HIGH AMBIENT TEMPERATURE ANNUNCIATOR IS CLEARED	BOP 19		ANNUNCIATOR, VERBAL	ANNUNCIATOR, VERBAL	PA01		Y	SME	PF
1540	EDP-2		INFORM CREW OF DRYWELL RD 06 PRESSURE	RD 06		DRYWELL PRESSURE (0-50PSIA)	VERBAL, CRT	PA60	PMS	Y	SPDS	PF
1550			POSITION TO RESET LPCS INITIATION	BOP 21		LPCS INITIATION RESET CAPABILITY	DISCRETE CONTROL, INDICATOR LIGHT, ANNUNCIATOR	PA01	LPCS INIT. REACT	Y	SME	PF

SCENARIO A: IMMEDIATE CORE COOLING

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	RB EDP	RB EPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	REMARKS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
1560			POSITION TO STOP RHR A BOP PUMP	SS 20		RHR PUMP CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P601	E12-C002A	Y	SNE	PF
1570			REQUEST RD TO PUT RMCV SS 06 IN SERVICE BEFORE STARTING RECIRC	SS 06		VERBAL	VERBAL	P680		Y	SNE	PF
1580			POSITION TO START RMCV RD 01 RECIRC PUMP A & B	RD 01		RMCV RECIRC PUMP CONTROL CAPABILITY AND STATUS BOTTOM HEAD DRAIN FLOW (0-300 GPM), INLET FLOW (0-500 GPM), PUMP DISCHARGE FLOW (0-1500 PSIG)	DISCRETE CONTROLS	P680	633-C001 C33-C001B	Y	SNE	PF
1590			DISCUSS TRIPPING OF BEARING LIFT PUMP WITH SHIFT FOREMAN	SS 09		LIFT PUMP STATUS	VERBAL, INDICATOR LIGHTS, INDICATOR FLAG	P680		Y	SNE	PF
1595			POSITION TO START TURNING GEAR MOTOR	SS 08		TURNING GEAR MOTOR CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P680	11MG-TEN	Y	SNE	PF
1600			POSITION TO RESET INBOARD AND OUTBOARD ISOLATION RESET SWITCHES	SF 19		ISOLATION RESET CONTROL CAPABILITY AND STATUS	DISCRETE CONTROLS	P601	INBD ISOL. RESET OUTBD ISOL. RESET	Y	SNE	PF
1620			POSITION TO OPEN REACTOR WATER CLEAN-UP ISOLATION VALVES	SF 18		LINE UP RHR SYSTEM PMP SUCT IN/OUT ISOL VALVS, PUMP DISCHG IN/OUT ISOL VALVS, RTN TO FW IN/OUT ISOL VALVS, DRAIN FLOW IN/OUT ISOL VALVS CONTROL CAPABILITY AND STATUS	DISCRETE CONTROLS, INDICATOR LIGHTS	P601	1PCS-MOV61 A, 618, 60A, 60B, 59A, 59 B, 58A, 58B	Y	SNE	PF
1630			REQUEST RMO TO RACK OUT RHR A PUMP BREAKER	BOP DMS		COMMUNICATION CAPABILITY	PPMS	DMS		Y	SNE	PF
1640			POSITION TO CLOSE RHR BOP PUMP A MIN FLOW VALVE	BOP 20		TO PREPARE LIVE-UP FOR SHUT-DOWN COOLING MIN FLOW VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P601	E12-F00A	Y	SNE	PF

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQU	RB EOP	RBEPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL	SUIT	SOURCE	SOURCE LOCATION
1650			POSITION TO OPEN APCW SF ISOLATION DRYWELL SUPPLY ISOL., CRD SPPLY, DRYWELL RETURN INB. ISOL., DRYWELL RETURN OUTBD. ISOL. VALVE	SF 55		ISOLATION VALVES CONTROL CAPABILITY AND STATUS	DISCRETE CONTROLS, INDICATOR LIGHTS	P870	1CCP-MOV38 Y ,142,169,1 63,144,143	Y		SME	PF
1660			POSITION TO OPEN CONTAINMENT RETURN INBOARD ISOLATION, CONTAINMENT RETURN OUTBOARD ISOLATION, CONT. SERVICE AIR ISOL. VALVES	SF 55		ISOLATION VALVES CONTROL CAPABILITY AND STATUS	DISCRETE CONTROLS, INDICATOR LIGHTS	P870	1CCP-MOV15 Y 8,159,102	Y		SME	PF
1670			INFORM SHIFT FOREMAN THAT THREE DRYWELL UNIT COOLERS ARE RUNNING	BOP DRMS		DRYWELL UNIT COOLER STATUS	VERBAL	DRMS		Y	Y	SME	PF
1680	EDP-2-3.3.1	93	POSITION TO START DRYWELL UNIT COOLER	SS 71		DRYWELL UNIT COOLER CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P863		Y	Y	SME	PF
1690			POSITION TO OPEN CONDENSATE MAKE-UP, CONT. ISOL. CONT. & DRYWELL EQT. DRAIN OUTB. ISOL., BACKWASH TANK DRAIN CONT. ISOL. VALVES	BOP DRMS		ISOLATION VALVES CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P870	1CMS-MOV12 Y 5, 1DER-AOP12 7, 1WCS-MOV17 2	Y	Y	SME	PF
1700			RECEIVE INFORMATION FROM AHD THAT AHR PUMP A BREAKER IS RACKED OUT	BOP DRMS		COMMUNICATION CAPABILITY	PPAS	DRMS		Y	Y	SME	PF
1705			OBSERVE SUPPRESSION POOL TEMPERATURE ANNUNCIATOR AND VALUES	SF 83		ANNUN, SUPPRESSION TEMP(0-200F)	ANNUNCIATOR, RECORDER	P808	ANN-SC 1CMS-PR40A 1CMS-PR40B	Y	Y	SPDS	PF

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SCENARIO A: INADEQUATE CORE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	RB EDP	RB#	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
1710	EDP-2-3.2	83	POSITION TO RESET HIGH BOP 19 DRYWELL PRESSURE RESET A AND B			HIGH DRYWELL PRESSURE RESET CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P601	HIGH DN PRESS, RESET	Y	SME	PF
1720			POSITION TO RESET ADS 19 PRESSURE (LOW-LOW) RELIEF INHIBIT LOGIC RAB RESET		RESET ADS LOGIC	RESET CAPABILITY AND STATUS	DISCRETE CONTROLS, INDICATOR LIGHTS	P601	LD-LO RESET	Y	SME	PF
1740			REQUEST INFORMATION 19 CONCERNING POWER TO BEARING LIFT			VERBAL	VERBAL	P601		Y	SME	PF
1750			RECEIVES INFORMATION 19 ON POWER SUPPLIES FROM BOP			VERBAL	VERBAL	P601		Y	SME	PF
1780	EDP-1-3.2	4	OBSERVE REACTOR WATER 04 LEVEL			REACTOR WATER LVL (-160 TO +60 INCHES)	CRT	P680	PMS	Y	SPDS	PF
1790	EDP-1		DIAGNOSE INCREASE IN 03 REACTOR WATER LEVEL		MAINTAIN WITHIN ACCEPTABLE LIMITS	REACTOR WATER LEVEL (-160 TO +60 INCHES)	RECORDER	P680	C33-R608	Y	SPDS	PF
1800			DIAGNOSE INCREASE IN 06 REACTOR WATER LEVEL			REACTOR WTR LVL (-160 REORDER TO +60 INCHES)		P680	C33-R608	Y	SPDS	PF
1820			POSITION TO CLOSE THE 18 REACTOR WATER CLEAN-UP ISOLATION VALVES			PMP SUCT IN/OUT ISOL VALVES AND PMP DISCHG IN/OUT ISOL VALVES STATUS	DISCRETE CONTROLS	P601	633-F039 F03A F028 F040	Y	SME	PF
1830			POSITION TO CLOSE THE 18 REACTOR WATER CLEAN-UP ISOLATION VALVES			RTM TO FW IN/OUT ISOL VALVES AND DRAIN FLOW IN/OUT ISOL VALVES STATUS	DISCRETE CONTROLS	P601	633-F001,F 004,F053,F 054	Y	SME	PF
1840	EDP-1-3.2	4	OBSERVE REACTOR WATER 03 LEVEL			REACTOR WATER LEVEL (-160 TO +60 INCHES)	RECORDER	P680	C33-R608	Y	SPDS	PF
1850	EDP-1-3.2		OBSERVE REACTOR WATER 03 LEVEL			RY WATER LVL (-160 TO REORDER +60 INCHES)		P680	C33-R608	Y	SPDS	PF
1860			POSITION TO OPEN THE 20 RWR "A" PUMP SUCTION VALVE (SHUTDOWN COOLING VALVE)		LINE UP S/D COOLING MODE OF RWR	SHUTDOWN COOLING VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P601	E12-F002A	Y	SME	PF

SCENARIO A: INADEQUATE CORE COOLING
RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	RD EOP	ROBERS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
1870			POSITION TO CLOSE THE BOP 17 "C" RHR INJECTION VALVE			INJECTION VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P601	E12-F027B, Y E12-F042C	Y	SME	PF
1880			DISCUSS REASONS FOR DECREASE IN WATER LEVEL WITH SF	SS 01	LOCATE SOURCE OF INVENTORY LOSS	VERBAL	VERBAL	P680		Y	SME	PF
2000			REQUEST FROM THE SHIFT BOP 55/56 FOREMAN IF HE UNISOLATED THE MISCELLANEOUS DRYWELL AND CONTAINMENT VALVES			DRYWELL/CONT ISOL VALVE STATUS	VERBAL, INDICATOR LIGHTS	P670	10MS-MDV12 Y 5 10ER-RDP12 7 10CPMDV15B , 159 10MS-MDV17 2 SEE BELOW	Y	SPDS	PF
2005			REQUEST THE RD TO SHUT SS 03 THE RECIRC SUCTION VALVES			VERBAL	VERBAL, RECORDER	P680	C33-R608 Y	Y	SME	PF
2010			POSITION TO CLOSE THE RD 04 RECIRC PUMPS SUCTION VALVES AND			RECIRC PMP SUCT VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P680	B33-F023A Y B33-F023B	Y	SME	PF
2020	EOP-1-3.2	4	OBSERVE REACTION WATER LEVEL	SS 03		RI MTR LVL-160 TO +60 INCHES)	RECORDER	P680	C33-R608 Y	Y	SPDS	PF
2030			OBSERVE CONDENSATE SYSTEM STATUS	SF 02		PUMP DISCHG PRESS(0-250PSIG)/ROO LIGHTS STER PUMP DISCHARGE PRESS(0-800PSIG)/PUMP P RAPS(0-300)/BOOSTER PUMP RAPS (0-400)/PUMP FLOW(0-20,000GPM) PUMP/VALVE STATUS	INDICATOR LIGHTS	P680		Y	SME, SPDS	GP
2040			REQUEST OPINION FROM SHIFT SUPERVISOR ON THE RUNNING OF THE CONDENSATE HEATER DRAIN PUMP	SF 02		VERBAL	VERBAL	P680		Y	SME	PF
2050			INFORMS CONTROL ROOM CREW THAT INDICATION STATES LPCS TRIP HAS BEEN RESET	BOP DOWNS		LPCS RESET STATUS	VERBAL, LIGHTS DOWNS		E21-C001 Y	Y	SME	PF

SCEN	RB EOP	RBPB	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
2060			REQUESTS FROM AWD IF LACS HAS BEEN RESET	BOP DMS		COMMUNICATION CAPABILITY	PMS	DMS		Y Y SNE	PF	PF
2080			REQUEST FROM BOP OPERATOR THE STATUS OF HPMS SYSTEM	SS 03		VERBAL	VERBAL	P680		Y Y SNE	PF	PF
2090			INFORM SHIFT SUPERVISION THAT THEY HAVE NOT TRIED TO OPEN HPMS DISCHARGE VALVE SINCE IT WAS ELECTRICALLY SHUT	BOP 16		VERBAL	VERBAL	P601		Y Y SNE	PF	PF
2100			OBSERVE LOW WATER LEVEL AWD WITH CONFIRMATION INDICATORS	BOP 20		ANNUNCIATOR, INDICATION LIGHT	ANNUNCIATOR, INDICATION LIGHT	P601	AWD LOW WATER LEVEL	Y Y SPDS	PF	PF
2110			INFORM CR CREW THE ANNUNCIATOR IS AWD LEVEL	BOP 19		ANNUNCIATOR	ANNUNCIATOR	P601	ANN-BC	Y Y SNE	PF	PF
2120			DECIDE TO ISOLATE THE SF FEEDWATER SYSTEM	SF 02		PUMP/VALVE CONTROL CAPABILITIES AND STATUS	METERS, CRT, INDICATING LIGHTS, RECORDER S	P680		Y Y SNE	PF	PF
2130			REQUEST THE RD TO ISOLATE THE FEEDWATER	SF 02		VERBAL	VERBAL	P680		Y Y SNE	PF	PF
2140			POSITION TO CLOSE THE RD FM HDR SHUT-OFF VALVES	RD 03		SHUT-OFF VALVES CONTROL CAPABILITY AND STATUS, FM FLOW (0-8500 GPM/Hr)	DISCRETE CONTROLS	P680	B21-F065A Y B21-F065B	Y Y SNE, SPDS	PF	PF
2150			REQUEST STATUS OF SPRAY SYSTEMS	SF 18	ENSURE ADEQUATE INJECTION CAPABILITY	VERBAL	VERBAL	P601		Y Y SNE	PF	PF
2160			INFORM SHIFT FOREMAN THAT LACS IS UNAVAILABLE AND HPMS IS STILL RUNNING	BOP 18	USE AVAILABLE INJECTION	HPMS PUMP/VALVE STATUS, HPMS FLOW (0-7000 GPM) LACS SYSTEM STATUS	VERBAL	P601		Y Y SNE, SPDS	PF	PF
2170			POSITION TO OPEN HPMS INJECT SHUT OFF VALVE	BOP 16		INJECTION SHUTOFF VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATING LIGHTS	P601	E22A-F00A	Y Y SNE	PF	PF

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SERIAL	RB EOP	ABEPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	IN-FORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
2180			REQUEST THE ALO TO OPEN THE HPMS INJECTION VALVE	BOP DOWNS		COMMUNICATION CAPABILITY	PPMS	DOWNS		Y Y SME		PF
2190			RECEIVE FROM ALO INFORMATION CONCERNING WORKING STATUS OF HPMS INJECTION SHUT-OFF VALVE	BOP DOWNS		COMMUNICATION CAPABILITY	PPMS	DOWNS		Y Y SME		PF
2200			POSITION TO OPEN HPMS INJECTION SHUT-OFF VALVE	BOP 16		INJECTION SHUT-OFF VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P601	E228-F004	Y Y SME		PF
2210			DISCUSS WITH ALO STATUS OF HPMS INJECTION SHUT-OFF VALVE	BOP 16		COMMUNICATION CAPABILITY	PPMS	DOWNS		Y Y SME		PF
2215			POSITION TO CLOSE RMCU RD 01 RECIRC LOOP A AND B SUCTION VALVES		ISOLATE RMCU SYSTEM	RMCU LOOP SUCTION VALVES CONTROL CAPABILITY AND STATUS, BOTTOM HEAD DRAIN FLOW (0-300 GPM), INLET FLOW (0-500 GPM)	DISCRETE CONTROL, INDICATOR LIGHTS	P660	633-F100 633-F106	Y Y SME		PF
2220			POSITION TO RESET HPMS BOP 16 HIGH WATER LEVEL RESET			HPMS HI WATER LEVEL RESET CAPABILITIES AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P601	HPMS RESET	Y Y SME		PF
2230			POSITION TO OPEN HPMS INJECTION SHUT-OFF VALVE	BOP 16		INJECTION SHUT-OFF VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P601	E228-F004	Y Y SME		PF
2240	EOP-1-3.2	4	OBSERVE REACTOR WATER RD 03 LEVEL			REACTOR WATER LEVEL (0-60 INCHES)	METER	P680	633-RE08	Y Y SPOS		PF
2250			POSITION TO AUTO MAIN STEAM LINE B RELIEF VALVE			MSL RELIEF VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P601	B21-F0410	Y Y SME		PF
2260			INFORM CR CREW THE SRV BOP 22 IS SHUT			VERBAL, SRV STATUS	VERBAL	P601		Y Y SME		PF
2280			REQUEST THE RD TO SHUT SF DOWN THE HEATER DRAIN PUMPS			VERBAL	VERBAL	P680		Y Y SME		PF

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	RB EDP	ROBPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
2290			POSITION TO STOP THE HEATON DRAIN PUMPS AND	RD 02		HTR DR PUMP CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P680	1HDL-P1A 1HDL-P1B	Y Y	SME	DF
2300			POSITION TO CLOSE THE DISCHARGE VALVES	RD 02		DISCHARGE VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P680		Y Y	SME	DF
2310			OBSERVE REACTOR WATER LEVEL DECREASE	SF 03		REACTOR WTR LVL (-160 REORDER TO +60 INCHES)		P680	C33-R608	Y Y	SPDS	DF
2320			POSITION TO CLOSE THE LPCS INJECTION VALVE AND LPCS MIN FLOW TO SUPPRESSION POOL	BDP 20		LPCS INJECTION/MIN FLOW TO SP VALVES CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P-601	E21-F005 E21-F011	Y Y	SME	DF
2330	EDP-2-3.6	117	OBSERVE SUPPRESSION POOL WATER LEVEL	SF 83		SUPPRESSION POOL WATER LEVEL (18 - 22FT)	REORDER METER P608	P680	1DMS-TR24B 1DMS-L123B	Y Y	SME	DF
2340			INFORM CR CREW OF ACTIONS TAKEN WITH LPCS VALVES	BDP 05		VERBAL	VERBAL	P680		Y Y	SME	DF
2350			DISCUSS REASONS FOR LEVEL RESTORATION	SS 01		VERBAL	VERBAL	P680		Y Y	SME	DF
2355			READ PROCEDURE	BDP 22		PROCEDURE	PRINTED MATERIAL	P601		Y Y	SME	DF
2360			POSITION TO CLOSE THE RHR SHUTDOWN COOLING VALVE	BDP 22		SHUTDOWN COOLING VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P601	E12-F009	Y Y	SME	DF
2370			POSITION TO CLOSE THE RHR "A" SHELL SIDE HI OUTLET VALVE	BDP 20		SHELL SIDE HI OUTLET VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P601	E12-F003A	Y Y	SME	DF
2380			READ PROCEDURE	BDP 20		PROCEDURE	PRINTED MATERIAL	P601		Y Y	SME	DF
2390			POSITION TO DESELECT THE NEUTRON INSTRUMENTATION	RD 06		SW/IRM CONTROL CAPABILITY AND STATUS	INDICATOR LIGHTS, DISCRETE CONTROLS, DIGITAL DISPLAYS	P680	1DMS-SHM, PB	Y Y	SME	DF

SCENARIO A: INADEQUATE CORE COOLING

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SECU	RB EOP	REBPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
2410			INFORMS SF THE SUPPLY BREAKERS FOR THE LIFT PUMPS CAN BE SHUT	BOP 20		VERBAL, SUPPLY BREAKER STATUS	VERBAL	P601		Y	SME	RF
2420			POSITION TO TRIP ELECTRICAL BREAKERS	SF 32		ELECTRICAL BREAKER CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P077	1EJS-HC004 9 1EJS-HC005 0 1EJS-HC006 6 1EJS-HC002 5	Y	SME	RF
2430			INFORM THE RD TO PLACE SF TURBINE ON THE TURNING GEAR	09		VERBAL, TURBINE STATUS	VERBAL	P680		Y	SME	RF
2440			POSITION TO RESET THE RD EMERGENCY BEARING AND SEAL OIL PUMPS	09		EMERGENCY BEARING/SEAL OIL PUMPS CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P680	1TAL-1,2,3 4	Y	SME	RF
2450			POSITION TO OPEN THE SF RADU ISOLATION VALVES	SF 16		PWP SUCT INBD/OUTBD ISOL VALVES, PWP DISCHG INBD/OUTBD ISOL VALVES, FW RTN VALVES, DRAIN FLOW INBD/OUTBD ISOL VALVES CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P601	633-F001,4 Y 28,34,39, 53,54,40	Y	SME	RF
2460			POSITION TO OPEN THE RHR INBOARD AND OUTBOARD COOLING SUCTION VALVE	BOP 20		COOLING SUCTION VALVES CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P601	E12-F009,F 008	Y	SME	RF
2470			OBSERVE RHR SYSTEM INDICATORS	BOP 20		PWP FLOW(0-8000GPM)/AMPS S, INDICATOR (0-300), HI OUT/BYP POSITION(0-100%), HI INLET/OUTLET TEMPS(0-600F), PUMP/V ALVE STATUS	METERS, RECORDER	P601	VARIOUS	Y	SME, SPDS	RF

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SECU	RB	EDP	REPS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL	SUIT	SOURCE	SOURCE LOCATION
2480				POSITION TO RESET THE BOP 19 ISOLATION RESET SWITCHES	RO 19		ISOL RESET CAPABILITIES	DISCRETE CONTROLS	PG01	ISOL RESETS	Y	Y	SNE	PF
2485				READ PROCEDURE	RO 04		PROCEDURE	PRINTED MATERIAL	PG80		Y	Y	SNE	PF
2490				POSITION TO OPEN THE RO 04 RECIRC SUCTION VALVE	RO 04		RECIRC SUCTION VALVE DISCRETE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	PG80	B33-F0230A B	Y	Y	SNE	PF
2500				REQUEST INFORMATION FROM RAD-WASTE ON RWR ACCEPTANCE	BOP DMS		COMMUNICATION CAPABILITY	PARS	DMS		Y	Y	SNE	PF
2510				POSITION TO OPEN THE BOP 20 RWR "A" HI FLOW TO RWC AND RADWASTE OUTBOARD ISOLATION VALVE	BOP 20		HI FLOW TO RWC/RADWASTE OUTBO ISOL VALVES CONTROL CAPABILITY AND STATUS	DISCHARGE VALVE, INDICATOR LIGHTS	PG01	E12-F040 E12-F049	Y	Y	SNE	PF
2520				POSITION TO OPEN THE RO 01 RAD RECIRC PUMP A AND B	RO 01		RADU PUMP CONTROL CAPABILITY AND STATUS, BOTTOM HEAD DRAIN FLOW (0-300 GPM), INLET FLOW (0-500 GPM), PUMP DISCHARGE PRESSURE (0-1500 PSIG)	DISCRETE CONTROL	PG80	B33-C001A B	Y	Y	SNE	PF
2525				OBSERVE VALVE POSITION DOP 17 INDICATOR	DOP 17		VALVE STATUS	METER	PG01	E12-AB11A	Y	Y	SNE	PF
2530				POSITION TO OPEN THE BOP 20 RWR SHELL SIDE OUTLET VALVE	BOP 20		SHELL SIDE OUTLET VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS, METER	PG01	E12-F003A E12-AB11A	Y	Y	SNE	PF
2540	EDP-1-3.2	4		OBSERVE REACTOR WATER BOP 17 LEVEL	BOP 17		REACTOR WTR LVL (0-60 INCHES)	REORDER	PG01	B33-AS23A	Y	Y	SPDS	PF
2550				OBSERVE RWR TEMPERATURE	BOP 02		HI SHELL/TUBE INLET/OUTLET TEMPS (0-600F)	METER	PG01	E12-AB01	Y	Y	SPDS	PF
2560				POSITION TO RESET THE RO 04 RECIRC RWR MOTION INHIBIT RESET	RO 04		MOTION INHIBIT RESET CAPABILITY AND STATUS	DISCRETE CONTROL	PG80	MOTION INHIBIT RESETS	Y	Y	SNE	PF

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEID	RB EDP	RACRS	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
2570			POSITION TO CLOSE THE RD 04 LOOP RAB FLOW CONTROLLERS			LOOP FLOW CONTROL CAPABILITY AND STATUS, RECIRCULATION CONTROL FLOW (0-40,000 GPM)	CONTINUOUSLY VARIABLE	P680	B33-H603A B33-H603B	Y	SPDS	PF
2580			POSITION TO STOP THE RD 04 RAB RECIRC PUMPS			RECIRCULATION PUMP CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHT	P680	B33-C0014A B	Y	SME	PF
2590			POSITION TO RESET THE RD 04 RAB RECIRC PUMPS CAVITATION INTERLOCK			CAVITATION INTERLOCK DISCRETE RESET CAPABILITY AND CONTROL STATUS		P680		Y	SME	PF
2600			CALCULATE HEAT TRANSFER RATE	BDP 20		FLOW/TEMP DATA	RECORDER, METER	P601	E12-H601 E12-H603A	Y	SME	PF
2610			READ PROCEDURES	SS DESK		PROCEDURE	PRINTED MATERIAL	DESK		Y	SME	PF
2620			OBSERVE REACTOR VESSEL RD 00 TEMPERATURE			REACTOR VESSEL TEMPERATURE (0-600F)	RECORDER	P614	B33-H604 B21-H643	Y	SPDS	PF
2630			CALCULATE TEMPERATURE RD 00 DIFFERENCE FOR RECIRC PUMP START			STM BONE TEMP (0-1200PSIG), BOT TOM HD DR TEMP (0-600F), LOOPS A/B TEMP (0-600F)	RECORDER	P614		Y	SPDS	PF
2640			POSITION TO ON THE RAB RD 20 SYSTEM 2 INIT RESET			INIT RESET CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P601		Y	SME	PF
2650			INFORM SHIFT SUPERVISOR OF DELAY IN PUTTING SHUTDOWN COOLING IN SERVICE	BDP 20		VERBAL	VERBAL	P601		Y	SME	PF
2660			ADJUST RABR HEAT EXCHANGER WITH RAB A HI FLOW VALVE	BDP 20		HI FLOW CONTROL VALVE CONTROL CAPABILITY AND STATUS, HI FLOW, HI INLET/OUTLET TEMPS	DISCRETE CONTROL, METER	P601	E12-F003A E12-F611A	Y	SME	PF
2670			POSITION MAIN STEAM LINE SERV OPEN THEN CLOSE	SF 19		SRV CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P601		Y	SME	PF
2680			DISCUSS THE DELTA TEMPERATURE IN RECIRC LOOPS WITH CR CREW	RD 02		VERBAL	VERBAL, RECORDER	P680	B33-H604	Y	SME	PF

SCENARIO A: INADEQUATE CORE COOLING

RIVER BEND STATION TASK ANALYSIS WORKSHEET

SEQ#	RB EDP	ROB#S	TASK/SUBTASK	CREW LOCATION	ACTION REQUIREMENTS	INFORMATION & CONTROL REQUIREMENTS	MEANS	PANEL ID	COMPONENT NUMBER	AVAIL SUIT	SOURCE	SOURCE LOCATION
2690			POSITION TO OPEN THE RECIRC AND DISCHARGE VALVES	RD 04		DISCHARGE VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL	P600	E12-H611A E12-H611B	Y	SNE	PF
2700			POSITION TO ON THE RHR BOP A PUMP	RD 20		PUMP CONTROL CAPABILITY AND STATUS, PUMP FLOW (0-8000GPM), PUMP LIGHTS RPPS (0-300)	DISCRETE CONTROL, INDICATOR LIGHTS	P601	E12-C002H	Y	SNE, SP05	PF
2710			POSITION TO OPEN THE RHR A COOLING INJECTION VALVE	RD 20		INJECTION VALVE CONTROL CAPABILITY AND STATUS	DISCRETE CONTROL, INDICATOR LIGHTS	P601	E12-F053A	Y	SNE	PF

APPENDIX B

GUIDELINES FOR DOCUMENTATION OF
INSTRUMENTATION AND CONTROLS



General Physics Corporation

MEMORANDUM

DATE: July 30, 1984
GP-M-212118

TO: Bob Price
FROM: Don Burgy *DB*
SUBJECT: RBS Instrumentation and Control
 Characteristics (DCRDR Verification Phase)

Enclosed are "Guidelines for Documentation of Instrumentation and Controls." These guidelines have been developed as part of the Detailed Control Room Design Review (DCRDR) to assist those engineers who will have responsibility for providing information requisite to the DCRDR phase of verifying equipment suitability.

Please note that the attached guidelines contain three attachments and two tables. Attachment 3 contains a listing of components for which Tables 1 and 2 must be completed. If the component identification is not sufficiently clear, the Task and Element description may provide clarification. Although there are nine columns on Table 1, please complete columns 1 through 5, and 8. Complete all columns of Table 2. The information you will be providing should be "as built" information. Therefore, please obtain all information from the control room, not the simulator. Finally, please use separate tables for each system.

All completed tables must be returned to Columbia by no later than August 6, 1984. If you have any questions, please call Rich Stamm. The balance of the information will be completed by Startup Engineers onsite. Don Chase will be coordinating the latter review onsite.

Enclosures

cc: L. Baker
D. Chase (GSU)
B. Byrd
~~R. Stamm~~

Project File

VERIFICATION OF INSTRUMENTATION
AND CONTROL SUITABILITY ISSUES

GUIDELINES FOR DOCUMENTATION OF
INSTRUMENTATION AND CONTROLS

One objective of the Detailed Control Room Design Review being performed for the River Bend Station is to determine the input and output requirements of the control room crew for emergency operation and to ensure that required systems can be efficiently and reliably operated under emergency conditions by available personnel. Specifically, the DCRDR seeks to identify all information sources and control devices needed to 1) initiate, maintain or remove a system from service, or change a system configuration, 2) confirm that appropriate system response has or has not occurred (i.e. feedback), or 3) make a decision regarding plant or system status. To this end, please provide the following information on copies of the attached Tables:

Table 1: Instrumentation

Column 1: Control Room Output Parameter

Provide the output parameter being displayed (e.g. flow, pressure, level, speed, position, amps, watts, etc.) Please be as specific as you can (e.g. CRD pump amps, reactor feed pump suction pressure, wide range reactor water level, RCIC turbine speed, MSIV position, etc.)

Column 2: Control Room Output Device

Provide the means by which the output parameter in column 1 is presented to the operator (controller, meter, recorder, digital display, indicating light, etc.)

Column 3: I.D. #

Provide the I.D. # for the output device described in column 2. This number may be provided by P&ID's, Instrument Data Sheets or any other traceable document.

Column 4: Control Room Output Device Range and Units

Provide the range of the output device (e.g. 0 - 7000 gpm) and the units in which the output is displayed (e.g. Is flow displayed in gpm or lbm/hr, is pressure displayed as psig or inches of water, etc.) If the output device is an indicating light displaying pump or valve status, etc., enter N/A.

Column 5: Location of Information or Control Device

Use Attachment 1, Panel Insert Numbering, to provide the necessary information. For example, RCIC components are provided on Panel 601, Insert 21. This may be written as P601/21. NOTE: You need not provide any information for information sources or control devices located on panels other than those shown on Attachment 1.

Column 6: Output Device Signal Source

Provide a description of the device measuring, directly or indirectly, the parameter being displayed (e.g. pressure transmitter, flow element, limit switch, conductivity element, etc.) This information may be provided by P&ID's, Instrument Data Sheets or any other traceable documents.

Column 7: I.D. #

Provide the I.D. # for the signal source described in column 6.

Column 8: Direct or Indirect

Indicate whether the information provided in the control room is direct (D) information or indirect (I) information (e.g. is indicated flow measured directly by a flow element or indirectly by a differential pressure transmitter; does the SRV indicating light provide valve status or solenoid status; etc.) Attachment 2, DCRDR Flow Chart, is provided for your review.

Column 9: SPDS (SEE BELOW)

Table 2: Controls

Column 1: Device, Parameter or Display Controlled

Provide a specific description of every device, parameter and display associated with your assigned system(s) which can be controlled from the control room (e.g. RCIC pump flow, Reactor Mode, Core Map displays, reactor water level, recirc. flow control valve position, etc.) Once again, you need only address those controls provided on the panels and inserts of Attachment 1.

Column 2: Control Room Control Device

Provide a description of the type of device used to control the items listed in column 1 (e.g. switch, pushbutton, controller, etc.)

Column 3: I.D. #

Provide the I.D. # of the control room device described in column 2. This information may be provided by P&ID's, Instrument Data Sheets or any other traceable documents.

Column 9: Safety Parameter Display System (SPDS)

Indicate with a Yes or No whether the parameter is indicated on the SPDS.

Column 4: Control Device States

Provide all control device states for items in column 2 (e.g., 3-position switch - STOP/AUTO/START; rotating collar pushbutton - ARM/DISARM; continuously variable controller - AUTO/MANUAL)

Column 5: Location of Control Device

Using Attachment 1, provide the Panel/Insert number as done for Table 1.

Column 6: Direct or Indirect

Indicate whether the device, parameter or display is controlled directly (D) or indirectly (I) (E.G., Is recirculation system flow controlled by means of a flow demand signal or a flow control valve position demand signal, etc.)

The above listed information should be provided for ALL instrumentation and control devices located on those panels shown on attachment 1. If required information is unavailable, please indicate this by entering N/A in the appropriate column.

The Information and Control column of Attachment 3 presents a listing of some of the data needed. Please note that the level of detail needed for Tables 1 and 2 is more extensive than that provided on Attachment 3.

Finally, please provide the system name and designation (e.g., B21, C11, etc.) in the space provided at the top of each table.

System Name _____
System designation _____

TABLE 1

INSTRUMENTATION
(Signals Originating Outside Control Room)

<u>Control Room Output Parameter</u>	<u>Control Room Output Device</u>	<u>I.D. #</u>	<u>Control Room Output Device Range & Units</u>	<u>Location of Information or Control Device</u>	<u>Output Device Signal Source</u>	<u>I.D. #</u>	<u>Direct(D)/Indirect(I)</u>	<u>SPDS</u>
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System Name _____
System Designation _____

TABLE 2

CONTROLS
(Signals Originating Inside Control Room)

Device,
Parameter
or Display
Controlled

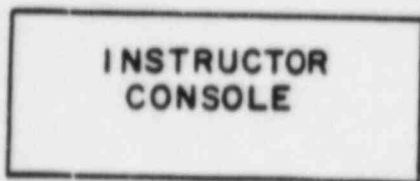
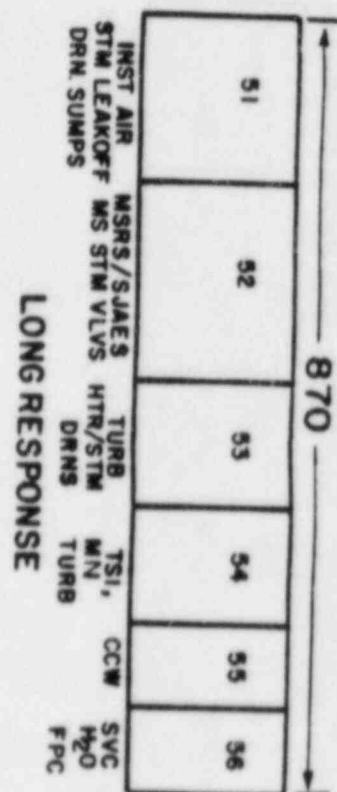
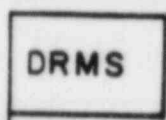
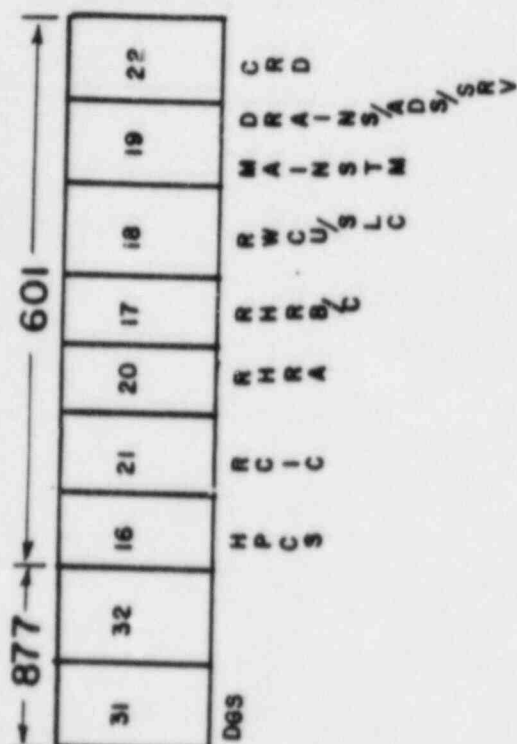
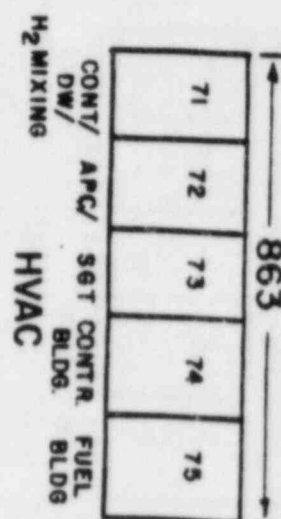
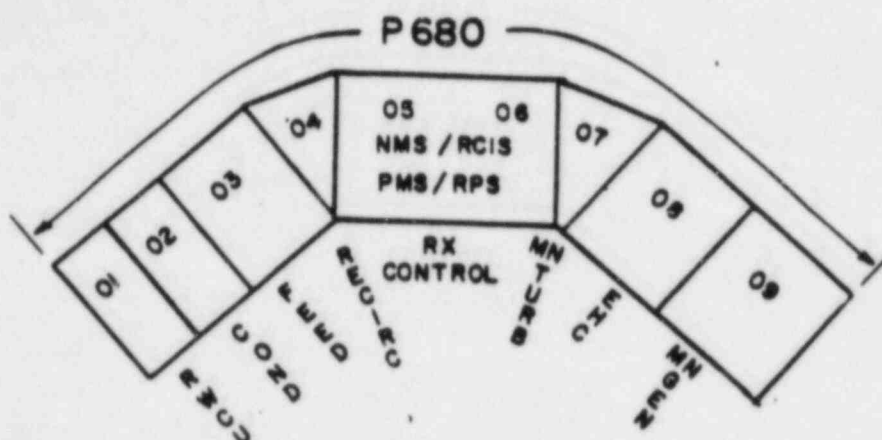
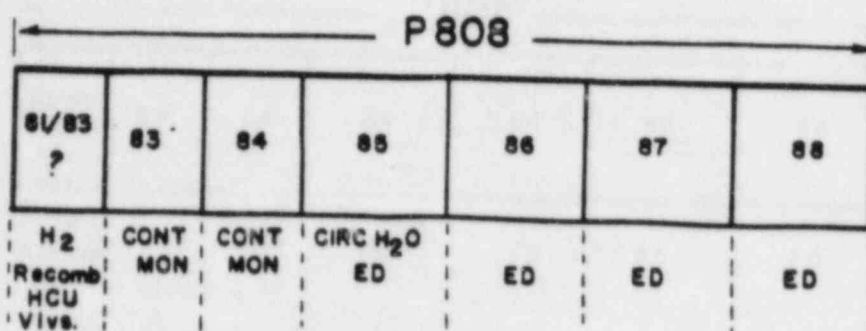
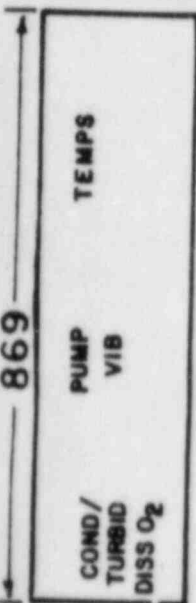
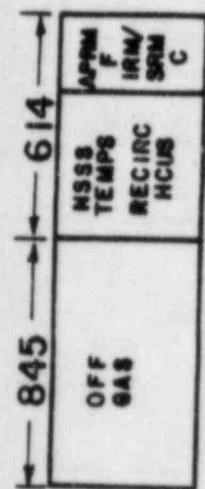
Control Room
Control Device

I.D. #

Control Device
States

Location
of Device

Direct/
Indirect



PANEL INSERT NUMBERING

(NOT TO SCALE)

For every task in the task analysis, verify that the equipment specified is suitable to meet the demands of emergency contingencies.

CRITERIA FOR DECISIONS

HFE/OPS

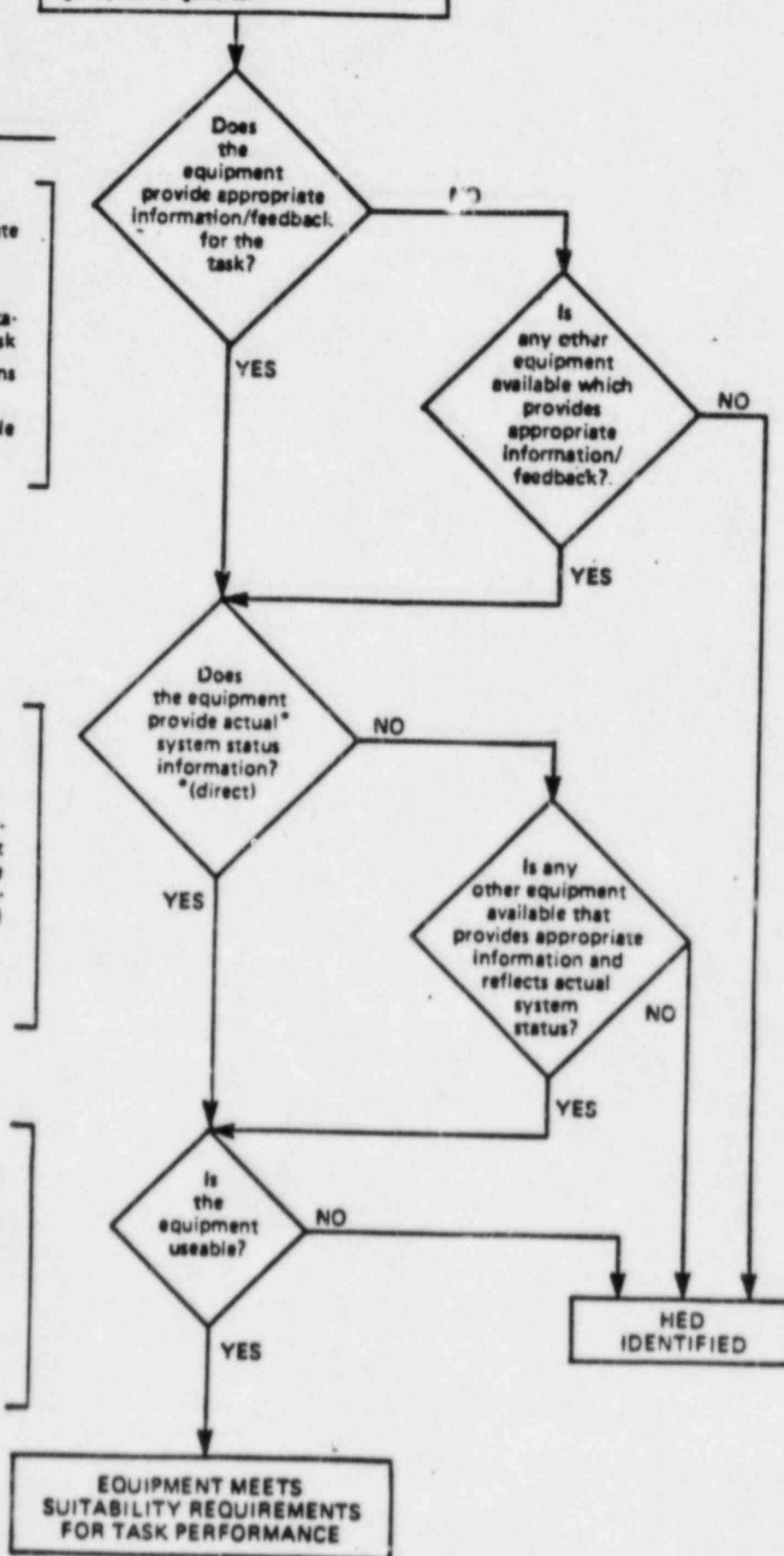
- Information displayed to appropriate modality (visual vs. auditory)
- Appropriate parameter displayed
- Display of quantitative and/or qualitative information appropriate for task
- Discrete/continuous control functions appropriate
- Display of trend information available when appropriate

I&C

- Actual system/equipment status information is provided rather than indirect information (e.g., demand vs. valve position for controllers, direct vs. indirect measure of flow in system loop)

HFE/OPS/I&C

- Equipment provides appropriate precision and range of control
- Scale units are consistent with the degree of precision needed
- Scale range spans the expected range of operational parameters
- Values displayed are in a form immediately useable w/o conversion



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07/20/84

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
ICCP-MOV158, 159, 102	A	1660	P870	55	POSITION TO OPEN CONTAINMENT RETURN INBOARD ISOLAION, CONTAINMENT RETURN OUTBOARD ISOLATION, CONT. SERVICE AIR ISOL. VALVES
ICCP-MOV38, 142, 169, 1	A	1650	P870	55	POSITION TO OPEN RPCCW ISOLATION DRYWELL SUPPLY ISOL., CRD SPPLY, DRYWELL RETURN INB. ISOL., DRYWELL RETURN OUTBD. ISOL. VALVE
63, 144, 143					
ICMS-AR25B	C	80	P808	03	MONITOR DRYWELL TEMPERATURE
ICMS-AR25B	C	600	P808	83	MONITOR CONTAINMENT INDICATIONS
ICMS-PR20A					
ICMS-TR40B					
ICMS-PR2A	B	710	P808/	83	MONITOR DRYWELL/CONTAINMENT PRESSURE
		680			
ICMS-PR2A,	A	1320	P808	83	OBSERVE DRYWELL TEMPERATUE AND PRESSURE
ICMS-TRY42A					
ICMS-PR2B	D	480	P808	83	OBSERVE CONTAINMENT/DRYWELL PRESSURE
ICMS-PR2B	D	510	P808	83	INFORM SHIFT SUPERVISOR OF SUPPRESSION POOL HIGH LEVEL ALARM
ICMS-PR2B	D	520	P808	83	OBSERVE SUPPRESSION POOL LEVEL
ICMS-PR2B	D	530	P808	83	MONITOR DRYWELL PRESSURE
ICMS-PR2B	C	740	P808	83	MONITOR CONTAINMENT TEMPERATURE AND SUPPRESSION POOL TEMPERATURE
ICMS-TR40B					
ICMS-TR24A	D	280	P808	84	OBSERVE SUPPRESSION POOL TEMPERATURE
ICMS-TR24B	D	250	P808	83	OBSERVE SUPPRESSION POOL TEMPERATURE
ICMS-TR24B	D	470	P808	83	INFORM CONTROL ROOM CREW SUPPRESSION POOL TEMPERTURE GREATER THAN 200
ICMS-TR24B	A	2330	P808	83	OBSERVE SUPPRESSION POOL WATER LEVEL
ICMS-LI23B					
ICMS-TR41A, B	B	1250	P808	83	MONITOR DRYWELL TEMPERATURE
ICMS-TR41A, TR41B, PR2	B	75	P808	83	INFORM SHIFT FOREMAN OF DRYWELL TEMPERATURE AND PRESSURE
A, PR2B					
ICMS-TR41A	C	310	P808	83	INFORM CONTROL ROOM CREW DRYWELL TEMPERATURE STARTING TO DECREASE AND SUPPRESSION POOL TEMPERTURE DECREASING
ICMS-TR40A,					
ICMS-TRX42A,	C	950	P808	83	INFORM SF CNTNMT TEMP. IS 75 DEGREES F, D/W PRESS. IS 3.5 LBS., AND DRYWELL TEMP. IS GREATER THAN 200 DEGREES F
ICMS-PR2A, "					
ICMS-TR41A					
ICNS-MOV125,	A	1690	P870	DRMS	POSITION TO OPEN CONDESATE MAKE-UP CONT. ISOL. CONT. & DRYWELL EQT. DRAIN OUTB. ISOL., BACKWASH TANK DRAIN CONT. ISOL. VALVES
IDER-AOP127,					
1WCS-MOV172					
ICNS-MOV125	A	2000	P870	55	REQUEST FROM THE SHIFT FOREMAN IF HE UNISOLATED THE MISCELLANIOUS DRYWELL AND CONTAINMENT VALVES
IDER-AOP127					
ICCPMOV158, 159					
1WCS-MOV172					
SEE BELOW					
ICPM-1FN1A	B	1910	P863	71	POSITION TO START HYDROGEN MIXING FANS
ICPM-1FN1B					
ICPM-FN1A	C	820	P863	72	POSITION TO START DRYWELL HYDROGEN MIXING FANS
ICPM-FN1B					
ICPM-FN1A	C	850	P863	72	POSITION TO STOP DRYWELL HYDROGEN MIXING FANS
ICPM-FN1B					
ICPM-MOV2A	C	870	P863	71	POSITION TO CLOSE DRYWELL HYDROGEN MIXING INBOARD AND OUTBOARD ISOLATION VALVES
ICPM-MOV2B					
ICPM-MOV4A					
ICPM-MOV4B					
ICPM-MOV2A, B	B	1095	P863	71	POSITION TO CLOSE INBOARD AND OUTBOARD ISOLATION VALVES
ICPM-MOV4A, B					

B-10

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
1CPM-MOV2A	C	680	P863	71	POSITION TO OPEN DRYWELL HYDROGEN MIXING INBOARD AND OUTBOARD ISOLATION DAMPERS
1CPM-MOV4A	B	930	P863	71	POSITION TO OPEN INBOARD AND OUTBOARD H2 MIXING ISOLATION VALVES
1CPM-MOV2B,					
1CPM-MOV4B,					
1CPM-MOV4A					
1CPM-MOV2B	C	700	P863	71	POSITION TO OPEN DRYWELL HYDROGEN MIXING INBOARD AND OUTBOARD ISOLATION VALVES
1CPM-MOV4B					
1CPM-MOV3A	C	750	P863	72	POSITION TO OPEN DRYWELL HYDROGEN MIXING OUT INBOARD AND OUTBOARD ISOLATION VALVES
1CPM-MOV1A	B	800	P863	72	POSITION TO OPEN INBOARD AND OUTBOARD H2 MIXING ISOLATION VALVES
1CPM-MOV3A					
1CPM-MOV1A					
1CPM-MOV3B					
1CPM-MOV1B					
1CPM-MOV3A	C	860	P863	72	POSITION TO CLOSE DRYWELL HYDROGEN MIXING OUT INBOARD AND OUTBOARD ISOLATION VALVES
1CPM-MOV3B					
1CPM-MOV1A					
1CPM-MOV1B					
1CPM-MOV3B	C	810	P863	72	POSITION TO OPEN DRYWELL HYDROGEN MIXING INBOARD AND OUTBOARD ISOLATION DAMPERS
1CPM-MOV1B					
1CPM-MOV4A & 2A	A	1270	P863	71	POSITION TO CLOSE INBOARD AND OUTBOARD ISOLATION VALVES FOR HYDROGEN MIXING
1CPM-MOV4A	B	900	P863	71	POSITION TO OPEN INBOARD AND OUTBOARD ISOLATION VALVES
1CPM-MOV2B					
1DRS-VC1E	A	1480	P863	71	POSITION TO OFF DRYWELL UNIT COOLER
1DRS-VCID	A	1230	P863	71	POSITION TO ON DRYWELL UNIT COOLER FAN
1E12-F008B	C	560	P870	56	POSITION TO CLOSE HEAT EXCHANGER B SERVICE WATER DISCHARGE VALVE
1E12-F068A	C	525	P870	55	POSITION TO CLOSE HEAT EXCHANGER A SERVICE WATER DISCHARGE VALVE
1E12-F068A	E	170	P001	00	POSITION TO OPEN HEAT EXCHANGER SERVICE WATER DISCHARGE VALVE
1E12-F068A&B	D	410	P870	20	POSITION TO OPEN HEAT EXCHANGER A AND B SERVICE WATER VALVES
1E12-F042A	A	170	P601	20	OBSERVE RHR SYSTEM LINE-UP
1E12-F004A					
1EJS-ACB009	B	1055	P877	31	OBSERVE AND FOLLOW TRIP INDICATION ON BREAKERS
1EJS-ACB015					
1EJS-ACB049	A	2420	P877	32	POSITION TO TRIP ELECTRICAL BREAKERS
1EJS-ACB050					
1EJS-ACB066					
1EJS-ACB025					
1FWP-F164A	E	160	P001	00	VERIFY LOOP FLOW
1FWS-P1A	B	340	P680	03	POSITION REACTOR FEEDWATER PUMP SWITCH TO OFF
1FWS-P1A	B	1510	P680	03	INFORM SHIFT FOREMAN OF REACTOR LEVEL AND STARTING A REACTOR FEEDWATER PUMP
1FWS-P1A, B, & C	D	310	P680	03	INFORM CONTROL ROOM CREW FEEDWATER PUMPS TRIPPED
1FWS-P1A, B, & C	D	525	P680	03	POSITION TO START FEEDWATER LUBE OIL SYSTEM AND PUMP
1FWS-P1A	B	925	P680	03	POSITION TO START REACTOR FEEDWATER PUMP AND POSITION TO OPEN REACTOR FEEDWATER PUMP DISCHARGE VALVE
1FWS-MOV26A					
1FWS-P19A					
1FWS-P1B	B	740	P680	03	POSITION TO START RFP LUBE OIL SYSTEM START SWITCH
1FWS-P1B	B	1550	P680	03	INFORM SHIFT FOREMAN STARTING SECOND FEEDWATER PUMP AND OPENING DISCHARGE VALVE
1FWS-MOV26B					
1WS-P19B					

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I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
1FWS-P1B	B	235	P680	03	POSITION REACTOR FEEDWATER PUMP SWITCHES
1FWS-P1C					
1HDL-P1A	A	2290	P680	02	POSITION TO STOP THE HEATOR DRAIN PUMPS A&B
1HDL-P1B					
1HVR-UCIC	C	940	P863	71	POSITION TO START CONTAINMENT UNIT COOLER
1HVR-UCIC	C	950	P863	71	OBSERVE CONTAINMENT UNIT COOLER NOT STARTING
1HVR-UCIC	C	960	P863	71	POSITION TO STOP CONTAINMENT UNIT COOLER
1IAS-MOV106	A	1360	P870	55	POSITION TO OPEN CONTAINMENT INSTRUMENT AIR ISOLATION
1NHS-MCC102B	A	1510	P877	32	POSITION TO RESET SUPPLY BREAKER
1NPS-ACB09	B	220	P800	07/08	VERIFY AUTOMATIC TRANSFER AND FOLLOW BREAKER INDICATIONS
1NPS-ACB11					
1NNS-ACB06					
1NNS-ACB07					
1NNS-ACB14					
1RCS-MOV61A, 61B, 60A, 60B, 59A, 59B, 58A, 58B	A	1340	P800	01	POSITION TO OPEN RECIRC HYDRAULIC POWER ISOLATION VALVES
1RCS-MOV61A, 61B, 60A, 60B, 59A, 59B, 58A, 58B	A	1620	P601	10	POSITION TO OPEN REACTOR WATER CLEAN-UP ISOLATION VALVES
1SWP-MOV502B, 503B, 4B, 5B,	A	1220	P870	56	POSITION OPEN "B" CONTAINMENT UNIT COOLERS AND "B" DRYWELL UNIT COOLERS
1TMB-J1110	A	190	P680	07	VERIFY TURBINE TRIP
1TMB-J108	D	20	P680	09	OBSERVE TURBINE TRIP
1TMB-J1110					
1GMS-GI					
1TMB-J1108	E	40	P680	07	VERIFY TURBINE TRIPPED
1TME-MOV56	C	360	P870	54	POSITION TO OPEN MAIN STEAM SYSTEM ST VALVE
1TME-MOV52	C	410	P970	54	POSITION TO OPEN STEAM SEAL EVAPORATOR ST HEATER BYPASS VALVE
1TMB-TGN	A	1595	P680	08	POSITION TO START TURNING GEAR MOTOR
1TML-1, 2, 3, 4	A	2640	P680	09	POSITION TO RESET THE EMERGENCY BEARING AND SEAL OIL PUMPS
5 SRV'S	D	155	P601	19	INFORM SHIFT FOREMAN FIVE SRV'S OPEN
ADS INITIATE	B	1540	P601	19	POSITION TO ARM ADS MANUAL INITIATION PUSHBUTTON
ADS LOGIC MAN. INIT.	B	1785	P601	19	POSITION TO NORMAL COLLARS OF ADS "A" INSTANTANEOUS LOGIC MANUAL INITIATION
ADS LOW WATER LEVEL	A	2100	P601	20	OBSERVE LOW WATER LEVEL ADS WITH CONFIRMATION INDICATORS
ALL RODS	C	60	P680	06	VERIFY ALL RODS ARE INSERTED
ALL RODS, FULL CORE DISPLAY	E	50	P680	05	VERIFY ALL RODS IN
ANN	A	1240	P680	06	DETECT VENTILATION ALARM
ANN	A	1280	P845	00	OBSERVE ANNUNCIATORS FOR OFF GAS SYSTEM
ANN	B	10	P601	22	OBSERVE DRYWELL SUMP HIGH RATE ANNUNCIATOR
ANN	B	85	P680	01	OBSERVE DRYWELL HIGH AMBIENT TEMPERATURE ANNUNCIATOR
ANN	B	160	P680	05	INFORM SHIFT FOREMAN OF HIGH DRYWELL PRESSURE ALARM
ANN	B	170	P800	84	INFORM SHIFT FOREMAN OF DRYWELL ATMOSPHERE RADIATION ALARM
ANN	B	940	P863	71	INFORM SHIFT FOREMAN OF CONTAINMENT UNIT COOLER DRAIN FLOW ALARM
ANN	B	1130	P870	51	INFORM CREW OF REACTOR BUILDING FLOOR SUMP TROUBLE ALARM
ANN B-4	C	40	P601	22	INFORM CR CREW OF HIGH DRYWELL PRESSURE
ANN-5C	A	1705	P800	83	OBSERVE SUPPRESSION POOL TEMPERATURE ANNUNCIATOR AND VALUES
1CMS-PR40A					
1CMS-PR40B					
ANN-8C	A	2110	P601	19	INFORM CR CREW THE ANNUNCIATOR IS ADS LEVEL

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
ANN-A4, ANN-A5, ANN-B4, ANN-B5, ANN-C4	A	10	P680	02	OBSERVE ANNUNCIATORS
ANN-B3	A	100	P601	16	OBSERVE ANNUNCIATOR DIESEL GENERATOR (DG) RUNNING
ANN-B3	A	110	P601	16	INFORMS CREW THAT HPCS DG IS RUNNING
ANN-E3	C	370	P870	54	INFORM CONTROL ROOM CREW OF STEAM SEAL LOW PRESSURE ALARM
ANN/ACK	A	395	P601	20	POSITION ANNUNCIATOR ACKNOWLEDGE SWITCHES
ANN/ACK	A	420	P870	52	POSITION ANNUNCIATOR ACKNOWLEDGE SWITCH
ANN/ACK	A	430	P863	73	POSITION ANNUNCIATOR ACKNOWLEDGE SWITCH
ANN/ACK	A	450	P808	85	POSITION ANNUNCIATOR ACKNOWLEDGE SWITCH
ANN/ACK	A	530	P680	06	POSITION ANNUNCIATOR ACKNOWLEDGE SWITCHES
ANN/ACK	B	15	P601	20	POSITION ANNUNCIATOR ACKNOWLEDGE SWITCHES
ANN/ACK	D	60	P601	17	POSITION TO ACKNOWLEDGE ANNUNCIATOR SWITCHES
ANN/ACK	B	370	P601	16	VERIFY AUTOMATIC INITIATION SIGNALS FOR DIVISIONS 1,2,AND 3, VERIFY PUMPS RUNNING, & INFORM FOREMAN OF STATUS
E22-C001					
E21-C001					
E12-C002A, B, C					
ANNC-6	C	340	P601	19	OBSERVE "CONTAINMENT / DRYWELL DIFFERENTIAL PRESSURE HIGH" ANNUNCIATOR
ANNUNCIATORS	D	10	P680	05	OBSERVE ANNUNCIATORS
APRM MATRIX	A	1190	P680	05	OBSERVE APRM STATUS LIGHTS
B21-F041D	A	610	P601	19	POSITION OPEN SRV
B21-F041D	A	640	P601	19	POSITION CLOSE SRV
B21-F041D	A	2250	P601	19	POSITION TO AUTO MAIN STEAM LINE B RELIEF VALVE
B21-F047A	B	1210	P601	19	POSITION TO OPEN ONE SRV
B21-F047C	B	1820	P601	19	POSITION TO OPEN TWO SRV'S, ONE IN LINE B, ONE IN LINE C
B21-F051B					
B21-F051C	B	570	P601	19	ADJUST REACTOR PRESSURE WITH SRV'S
B21-F051D	A	580	P601	19	DIAGNOSE STATUS OF ADS AND SRV'S
B21-F051G	B	590	P601	19	ADJUST REACTOR PRESSURE WITH SRV'S
B21-F051G	C	1020	P601	19	POSITION TO OPEN TWO SRV'S
B21-F051D					
B21-F065A	A	2140	P680	03	POSITION TO CLOSE THE FW HDR SHUT-OFF VALVES
B21-F065B					
B21-F041B	A	960	P601	19	POSITION TO OPEN SRV
B21-R604	D	700	P680	03	MONITOR REACTOR LEVEL
B21-R605	A	840	P601	17	INFORM SHIFT FOREMAN RPV LEVEL
B21-R605	B	1868	P601	17	MONITOR REACTOR LEVEL ON SHUT DOWN RANGE
B21-R610	A	340	P601	17	INFORM CREW LEVEL ON FUEL ZONE INDICATOR
B21-R610	A	415	P601	17	OBSERVE REACTOR WATER LEVEL
B21-R610	A	650	P601	20	INFORM RD INDICATION SHOULD BE ON WIDE RANGE LEVEL RECORDER
B21-R615	D	670	P601	16	ADJUST REACTOR LEVEL WITH HPCS INJECTION
E22A-F004					
B21-R623A	A	280	P601	20	OBSERVE REACTOR WATER LEVEL
B21-R623A	B	300	P601	20	INFORM SHIFT FOREMAN THAT POST-ACCIDENT MONITOR PRESSURE INSTRUMENT FAILED LOW
B21-R623A	B	1867	P601	20	INFORM SHIFT FOREMAN REACTOR LEVEL INCREASING
B21-R623A	C	230	P601	20	MONITOR REACTOR WATER LEVEL
B21-R623A	C	880	P601	17	INFORM CONTROL ROOM CREW REACTOR WATER LEVEL IS 80 INCHES
B21-R623A	D	440	P601	20	INFORM SHIFT FOREMAN LEVEL IS -10 INCHES
B21-R623A	D	680	P601	20	MONITOR REACTOR PRESSURE

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
B21-R623A&B	B	210	P601	17	MONITOR WIDE-RANGE REACTOR WATER LEVEL
B21-R623A, B	D	710	P601	20	MONITOR REACTOR LEVEL
B21-R623B	A	900	P601	17	MONITOR REACTOR PRESSURE
B21-R623B	A	1020	P601	17	INFORM SHIFT SUPERVISOR OF REACTOR WATER LEVEL AND PRESSURE STATUS
B21-R643	A	1450	P614	00	COMPARE TEMPERATURES ON RECIRC SYSTEM
B33-C001A &B	D	240	P600	04	POSITION TO TRIP REACTOR RECIRC PUMPS
B33-R615A &B					
B33-C001A&B	A	2500	P600	04	POSITION TO STOP THE A&B RECIRC PUMPS
B33-C001A, B33C001B	C	50	P600	04	OBSERVE FEEDWATER PUMP INDICATOR LIGHTS
B33-F023A&B	A	2490	P600	04	POSITION TO OPEN THE RECIRC SUCTION VALVE
B33-F023A	A	2010	P600	04	POSITION TO CLOSE THE RECIRC PUMPS SUCTION VALVES A&B
B33-F023B					
B33-K602	B	100	P600	04	POSITION TO LOWER SETTING RECIRC FLUX CONTROLLER
B33-K602, K603A, K603B	B	140	P600	04	POSITION TO LOWER SETTING RECIRC FLUX CONTROLLER
B33-K603A	C	365	P600	04	POSITION TO DECREASE RECIRC LOOP A AND B FLOW CONTROLLERS
B33-K603B.					
B33-K603A	A	2570	P600	04	POSITION TO CLOSE THE LOOP A&B FLOW CONTROLLERS
B33-K603B					
B33-R604	A	2600	P600	02	DISCUSS?THE DELTA TEMPERATURE IN RECIRC LOOPS WITH CR CREW
B33-R604	A	2620	P614	00	OBSERVE REACTOR VESSEL TEMPERATURE
B21-R643					
B33-R623A	A	2540	P601	17	OBSERVE REACTOR WATER LEVEL
BREAKER POSITION	A	1310	P000	00	OBSERVE ELECTRICAL SYSTEM CONDITION
C11-P01A	A	270	P601	22	POSITION TO START CRD PUMPS
C11-P01B					
C33-R600	B	810	P600	03	POSITION TO MANUAL MASTER FEEDWATER CONTROL
C33-R601A, B, C	B	957	P600	03	POSITION FEEDWATER FLOW CONTROLLERS IN MANUAL MODE
C33-R602	B	955	P600	03	ADJUST LEVEL WITH START-UP LEVEL CONTROLLER IN MANUAL MODE
C33-R602	B	280	P600	03	POSITION TO OPEN STARTUP LEVEL CONTROLLER AND ISOLATION VALVE
FWS-MOV105					
C33-R605	D	170	P600	03	INFORM CONTROL ROOM CREW WATER LEVEL DECREASING
C33-R605	B	460	P601	19	ADJUST REACTOR PRESSURE WITH SRV'S
B21-F047F					
C33-R605	D	160	P600	03	MONITOR REACTOR PRESSURE AND LEVEL
C33-R606A, B, &C					
C33-R609					
B21-R604					
C33-R608					
C33-R606A, B, C	B	310	P600	03	INFORM SHIFT SUPERVISOR AND SHIFT FOREMAN OF HIGH REACTOR WATER LEVEL
C33-R608					
C33-R606A, B, C	B	350	P600	03	INFORM SHIFT FOREMAN THAT REACTOR WATER LEVEL EXCEEDED HIGH WATER
C33-R608					
C33-R606A, C33-R606B,	A	850	P600	03	OBSERVE REACTOR WATER LEVEL
C33-R606C					
C33-R608	A	330	P600	03	OBSERVES REACTOR WATER LEVEL
C33-R608	A	1005	P600	03	INFORM SHIFT SUPERVISOR OF REACTOR LEVEL
C33-R608	A	1790	P600	6	DIAGNOSE INCREASE IN REACTOR WATER LEVEL
C33-R608	A	1800	P600	06	DIAGNOSE INCREASE IN REACTOR WATER LEVEL
C33-R608	A	1840	P600	03	OBSERVE REACTOR WATER LEVEL
C33-R608	A	1850	P600	03	OBSERVE REACTOR WATER LEVEL

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
C33-R608	A	2005	P680	03	REQUEST THE RO TO SHUT THE RECIRC SUCTION VALVES
C33-R608	A	2020	P680	03	OBSERVE REACTOR WATER LEVEL
C33-R608	A	2310	P680	03	OBSERVE REACTOR WATER LEVEL DECREASE
C33-R608	C	890	P680	03	INFORM CONTROL ROOM CREW REACTOR WATER LEVEL IS 120 INCHES
C33-R608	C	1050	P680	03	OBSERVE REACTOR WATER LEVEL DECREASING
C33-R608	D	300	P680	03	INFORM CONTROL ROOM CREW WATER LEVEL DECREASING FAST
C33-R608, PMB	A	970	P680	04	MONITOR REACTOR PRESSURE
C33-R608, PMB	A	79	P680	05	MONITOR AND CONTROL RVP WATER LEVEL
C33-R608	B	500	P680	04	INFORM SHIFT FOREMAN REACTOR LEVEL IS 55 INCHES AND DECREASING
PMB					
C41-F001A	D	330	P601	18	POSITION TO RUN THE SLC PUMPS
C41-F004A					
C41-F001B					
C41-F004B					
C51-R603A, B, C, & D	A	540	P680	06	OBSERVE NUCLEAR POWER DECREASE
C51-R603A, B, C, D	D	690	P601	19	MONITOR REACTOR POWER
B21-F047A, B, C, D, F					
B21-F041A, B, C, D, F, G, L					
C61-R001	E	260	P001	00	ADJUST COOLDOWN RATE WITH RCIC FLOW CONTROLLER
CHANNEL SELECTS	D	500	P680	06	POSITION TO SELECT SRM CHANNELS A, B, C, AND D AND IRM CHANNELS A, B, C, D, E, F, G, AND H AND POSITION TO ON DRIVE IN AND POWER ON PB
DMS	A	490	P680	06	OBSERVE PLANT STATUS
DRIVE IN	C	180	P680	06	POSITION TO "IN" THE DETECTOR DRIVE IN SWITCH
DRMS	A	600	DRMS	DRMS	OBSERVE LEAKAGE CONTROL
DRMS	A	1110	DRMS	DRMS	OBSERVE DRYWELL ACTIVITY
DRMS	A	1120	DRMS	DRMS	INFORM SHIFT FOREMAN THAT DRYWELL ACTIVITY INCREASING
DRMS	A	1290	DRMS	DRMS	MONITOR CONTAINMENT RADIOACTIVITY
DRMS	A	1380	DRMS	DRMS	INFORM SHIFT SUPERVISION STATUS OF CONTAINMENT DRYWELL Sumps
DRMS	A	1390	DRMS	05	DIAGNOSE WITH RO DRYWELL PRESSURE
DRMS	B	630	DRMS	DRMS	OBSERVE DRYWELL RADIATION MONITORING
DRMS	C	710	DRMS	DRMS	TYPES TO CALL UP RADIATION MONITORING DISPLAY
DRMS	C	720	DRMS	DRMS	MONITOR CONTAINMENT RADIATION LEVELS
DRMS	C	730	DRMS	DRMS	MONITOR CONTAINMENT RADIATION LEVELS
DRMS	C	770	DRMS	DRMS	INFORM SHIFT FOREMAN GASEOUS AND PARTICULATE RADIATION INCREASING
DRMS	C	780	DRMS	DRMS	INFORM CONTROL ROOM CREW CONTAINMENT GASEOUS ALARM INITIATED
DRMS	C	800	DRMS	DRMS	INFORM SHIFT FOREMAN OF RADIATION READING
DRS-UC1E, UC1F	B	110	P863	71	POSITION TO ON DRYWELL UNIT COOLERS
DRYWELL LOGIC RESETS	B	1790	P601	18	TO POSITION TO RESET HIGH DRYWELL PRESSURE RVP LOW REVEL LOGIC A AND B AND HIGH DRYWELL PRESSURE RESET A AND B
E12-C002	B	1429	P601	21	POSITION TO CLOSE RCIC TRIP AND THROTTLE VALVE
E12-C002	B	1431	P601	21	POSITION TO OPEN RCIC TRIP AND THROTTLE VALVE
E12-C002, STATUS LIGHTS	B	1428	P601	21	INFORM SHIFT FOREMAN RCIC TURBINE TRIPPED AND WILL RESET
E12-C002A	A	720	P601	20	OBSERVE RHR A PUMP RUNNING
E12-C002A	A	1560	P601	20	POSITION TO STOP RHR A PUMP
E12-C002A	A	2700	P601	20	POSITION TO ON THE RHR A PUMP
E12-C002A	B	1457	P601	20	POSITION TO STOP RHR A PUMP
E12-C002A	B	1492	P601	20	POSITION TO START RHR PUMP A

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
E12-C002A	E	200	P001	00	POSITION TO START RHR PUMP A
E12-C002A	E	565	P001	00	POSITION TO START RHR PUMP A
E12-C002A, B, C	C	300	P601	20	INFORM SHIFT SUPERVISOR THAT ALL RHR AND CORE SPRAY PUMPS ARE RUNNING
E21-C001					
E22-C001					
E12-C002B	A	250	P601	17	OBSERVE RHR B PUMP
E12-C002C	B	1895	P601	17	POSITION TO STOP RHR PUMP C
E12-F002A	A	1860	P601	20	POSITION TO OPEN THE RHR "A" PUMP SUCTION VALVE (SHUTDOWN COOLING VALVE)
E12-F003	E	180	P001	00	POSITION TO CLOSE SHELL SIDE OUTLET VALVE
E12-F003*	B	1450	P601	20	POSITION TO CLOSE RHR A HEAT EXCHANGE SIDE OUTLET VALVE
E12-R611A					
E12-F003A	A	2370	P601	20	POSITION TO CLOSE THE RHR "A" SHELL SIDE HX OUTLET VALVE
E12-F003A	E	330	P001	00	POSITION TO CLOSE HX SHELL SIDE OUTLET VALVE
E12-F003A	E	400	P001	00	POSITION TO OPEN HX SHELL SIDE OUTLET VALVE
E12-F003A	E	560	P001	00	POSITION TO CLOSE HX SHELL SIDE OUTLET VALVE
E12-F003A	E	600	P001	00	ADJUST HX SHELL SIDE OUTLET VALVE AND HX SHELL SIDE BYPASS VALVE
E12-F048					
E12-F003A	A	2660	P601	20	ADJUST RHR A HEAT EXCHANGER WITH RHR A HX FLOW VALVE
E12-F611A					
E12-F003A	A	2530	P601	20	POSITION TO OPEN THE RHR SHELL SIDE OUTLET VALVE
E12-R611A					
E12-F003A	B	1472	P601	20	POSITION TO OPEN RHR A HEAT EXCHANGER OUTLET VALVE
E12-R612A					
E12-F004A	E	450	P001	00	POSITION TO CLOSE RHR PUMP SUCTION VALVE
E12-F006A	E	520	P001	00	VERIFY OPEN SHUTDOWN COOLING VALVE
E12-F006A	E	300	P001	00	VERIFY SHUT DOWN COOLING VALVE OPEN AND RHR PUMP SUCTION VALVE CLOSED
E12-F004A					
E12-F008	E	350	P001	00	POSITION TO OPEN OUTBOARD SHUTDOWN ISOLATION VALVE
E12-F008	E	510	P001	00	VERIFY OPEN OUTBOARD SHUTDOWN ISOLATION VALVE
E12-F009	A	2360	P601	22	POSITION TO CLOSE THE RHR SHUTDOWN COOLING VALVE
E12-F009	E	360	P001	00	POSITION TO OPEN SUCTION COOLING ISOLATION VALVE
E12-F009	E	500	P001	00	VERIFY OPEN SUCTION COOLING ISOLATION VALVE
E12-F009, F008	A	2460	P601	20	POSITION TO OPEN THE RHR INBOARD AND OUTBOARD COOLING SUCTION VALVE
E12-F010	E	340	LOCAL VLV		REQUEST AIO TO VERIFY MANUAL SHUTDOWN COOLING SUCTION VALVE IS OPEN
E12-F010	E	490	LOCAL VLV		REQUEST AIO TO VERIFY OPEN F010 VALVE
E12-F011A					
E12-F024A	B	1464	P601	20	POSITION TO OPEN RHR A HEAT EXCHANGE FLOW TO SUPPRESSION POOL VALVE
E12-F024A	A	1430	P601	20	POSITION TO CLOSE RHR A TEST RETURN TO SUPPRESSION POOL
E12-F024A	B	1363	P601	20	POSITION TO CLOSE RHR A TEST RETURN TO SUPPRESSION POOL VALVE
E12-F024A	C	500	P601	20	POSITION TO OPEN RHR A TEST RETURN TO SUPPRESSION POOL VALVE
E12-F024A	E	210	P001	00	POSITION TO OPEN TEST RETURN TO SUPPRESSION POOL VALVE
E12-F024A	E	470	P001	00	POSITION TO CLOSE RHR TEST LINE VALVE
E12-F024A, B	B	1145	P601	20	POSITION TO OPEN RHR A&B TEST RETURN
E12-F024B	C	550	P601	17	POSITION TO OPEN RHR B TEST RETURN TO SUPPRESSION POOL VALVE
E12-F027A	C	220	P601	20	POSITION TO CLOSE THE RHR A, B, AND C INJECTION VALVE
E12-F027B					
E12-F027C					
E12-F027B	D	500	P601	17	POSITION TO CLOSE RHR B INJECTION VALVE

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
E12-F027B, E12-F042C	A	1870	P601	17	POSITION TO CLOSE THE "C" RHR INJECTION VALVE
E12-F040	E	380	P001	00	POSITION TO OPEN DISCHARGE RADWASTE ISOLATION VALVE
E12-F040	E	420	P001	00	POSITION TO CLOSE DISCHARGE RADWASTE ISOLATION VALVE
E12-F040	A	2510	P601	20	POSITION TO OPEN THE RHR "A" HX FLOW TO RCIC AND RADWASTE OUTBOARD ISOLATION VALVE
E12-F049	D	420	P601	20	POSITION TO OPEN RHR A TEST RETURN TO SUPPRESSION POOL VALVE
E12-F042A, B	B	1153	P601	20	POSITION TO CLOSE RHR A&B INJECTION VALVES
E12-F042A, E12-R603A	A	730	P601	20	POSITION TO CLOSE RHR A INJECTION VALVE
E12-F042B	C	530	P601	17	POSITION TO CLOSE RHR B HX SHELL SIDE BYPASS VALVE
E12-F042C	C	1040	P601	17	POSITION TO OPEN RHR C INJECTION VALVE
E12-F047A	B	1460	P601	20	POSITION TO CLOSE RHR A HEAT EXCHANGE SHELL SIDE INLET VALVE
E12-F047A	B	1482	P601	20	POSITION TO OPEN RHR A HEAT EXCHANGER INLET VALVE
E12-F047A	E	290	P001	00	POSITION TO OPEN THE RHR HX SHELL SIDE INLET VALVE
E12-F047A	E	530	P001	00	VERIFY OPEN RHR HX SHELL SIDE INLET VALVE
E12-F048	E	190	P001	00	ADJUST OPEN TO 5% HX SHELL SIDE BYPASS VALVE
E12-F048	E	320	P001	00	POSITION TO CLOSE HX SHELL SIDE BYPASS VALVE
E12-F048	E	440	P001	00	POSITION TO OPEN HX SHELL SIDE BYPASS VALVE
E12-F048	E	540	P001	00	VERIFY OPEN HX SHELL SIDE BYPASS VALVE
E12-F048A	A	1440	P601	20	POSITION TO OPEN RHR A SHELL SIDE BYPASS VALVE
E12-F048A	D	400	P601	20	POSITION TO CLOSE RHR A HEAT EXCHANGER SHELL SIDE BYPASS VALVE
E12-F048A, B	B	1140	P601	20	POSITION TO CLOSE RHR A&B HEAT EXCHANGE BYPASS VALVE
E12-R612A, B	C	650	P601	20	ADJUST SERVICE WATER FLOW TO HEAT EXCHANGER
E12-F048A	B	540	P601	20	POSITION TO CLOSE HEAT EXCHANGER BYPASS VALVE
E12-F048A	B	600	P601	19	POSITION TO CLOSE HEAT EXCHANGE BYPASS VALVE
E12-R612A	B	770	P601	20	POSITION TO CLOSE RHR A HEAT EXCHANGE BYPASS VALVE
E12-R612A	E	390	LOCAL	00	REQUEST ALSO TO POSITION TO OPEN RHR RADWASTE INBOARD ISOLATION VALVE
E12-F049 (LOCAL OPERATION)	E	430	LOCAL	00	REQUEST ALSO TO POSITION TO CLOSE RHR RADWASTE INBOARD ISOLATION VALVE
E12-F049 (LOCAL OPERATION)	B	1481	P601	20	POSITION TO MANUAL AND ADJUST RHR TO RCIC PRESSURE CONTROLLER
E12-F04A	A	2710	P601	20	POSITION TO OPEN THE RHR A COOLING INJECTION VALVE
E12-F053A	E	570	P001	00	ADJUST RHR INJECTION VALVE
E12-F053B	C	170	P601	17	POSITION TO CLOSE THE RHR B COOLING INJECTION VALVE
E12-F064A	A	1640	P601	20	POSITION TO CLOSE RHR PUMP A MIN FLOW VALVE
E12-F064A	B	1459	P601	20	POSITION TO CLOSE RHR A PUMP MIN FLOW TO SUPPRESSION POOL VALVE
E12-F064A	E	240	P001	00	ADJUST RHR MIN FLOW VALVE
E12-F064A	E	280	P001	00	POSITION TO CLOSE THE RHR A MIN FLOW VALVE
E12-F064A	E	460	P001	00	POSITION TO CLOSE RHR PUMP MINIMUM FLOW VALVE
E12-F068A	E	310	P001	00	POSITION TO OPEN RHR COOLING WATER OUTLET VALVE
E12-F068A	E	480	P001	00	POSITION TO OPEN HX COOLING WATER OUTLET VALVE
E12-F068A, E12-R603A	A	790	P601	20	POSITION TO CLOSED RHR "A" HX SHELL SIDE BYPASS
E12-F074	B	1463	P601	20	ADJUST RHR "A" HEAT EXCHANGER VENT TO SUPPRESSION POOL VALVES
E12-F073	B	1471	P601	20	POSITION TO CLOSE RHR A FIRST AND SECOND VENTS TO SUPPRESSION POOL
E12-F074A					
E12-F073A					

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
E12-F048A	C	510	P601	20	POSITION TO CLOSE RHR A HEAT EXCHANGER SHELL SIDE BYPASS VALVE
E12-F048A&B	D	610	P601	20	ADJUST SERVICE WATER FLOW TO HEAT EXCHANGER FOR RHR LOOPS A AND B
E12-R612A&B					
E12-R602A&B					
E12-R005	E	580	P001	00	MONITOR RHR FLOW
E12-R005	E	590	P001	00	DECIDE FLOW REACHES 5000 GPM
E12-R601	A	2550	P601	02	OBSERVE RHR TEMPERATURE
E12-R601	A	2600	P601	20	CALCULATE HEAT TRANSFER RATE
E12-R603A					
E12-R602A	C	640	P601	20	OBSERVE RHR SYSTEM
E12-R603A					
E12-R602B					
E12-R604A	B	1461	P601	20	POSITION TO AUTOMATIC AND ADJUST RHR A HEAT EXCHANGE LEVEL CONTROL
E12-R604A	B	1474	P601	20	POSITION TO MANUAL AND ADJUST RHR A HEAT EXCHANGER LEVEL CONTROLLER
E12-R605	B	1462	P601	20	POSITION TO MANUAL AND ADJUST RHR TO RCIC PRESSURE CONTROL
E12-R606A	B	1473	P601	20	POSITION TO MANUAL RHR PRESSURE CONTROLLER
E12-R611A	A	2525	P601	17	OBSERVE VALVE POSITION INDICATOR
E12-R611A	A	2690	P600	04	POSITION TO OPEN THE RECIRC A&B DISCHARGE VALVES
E12-R611B					
E12-R612A	C	520	P601	20	OBSERVE E12-F048A VALVE POSITION INDICATION
E12-R612A	D	460	P601	20	OBSERVE VALVE POSITION AND RHR SERVICE WATER FLOW
E12-R602A					
E12-R612B	C	540	P601	17	OBSERVE E12-F048B
E21-C001	A	2050	DRMS	DRMS	INFORMS CONTROL ROOM CREW THAT INDICATION STATES LPCS TRIP HAS BEEN RESET
E21-C001	C	460	P601	21	POSITION TO STOP LPCS PUMP
E21-C001	A	240	P601	21	OBSERVE LPCS PUMP TRIP
E21-R600					
E21-C001					
E21-F005	B	1668	P601	21	POSITION TO CLOSE LPCS INJECTION SHUTOFF VALVE
E21-F005	B	1860	P601	21	POSITION TO OPEN LPCS INJECTION VALVE
E21-F005	C	245	P601	21	POSITION TO CLOSE THE LPCS'S INJECTION SHUTOFF VALVE
E21-F005	A	2320	P-601	20	POSITION TO CLOSE THE LPCS INJECTION VALVE AND LPCS MIN FLOW TO SUPPRESSION POOL
E21-F011					
E21-F012	B	1835	P601	21	ADJUST LPCS TEST RETURN TO SUPPRESSION POOL VALVE
E21-F042C	B	1665	P601	17	POSITION TO CLOSE RHR C INJECTION VALVE
E21-R600	B	1865	P601	21	OBSERVE LPCS PUMP FLOW
E22-C001	B	1885	P601	16	POSITION TO STOP HPCS PUMP MOTOR FEEDER BREAKER
E22-C001	C	480	P601	16	POSITION TO TRIP HPCS PUMP MOTOR BREAKER
E22-C001	C	490	P601	16	OBSERVE INDICATION OF HPCS TRIP
E22-R603					
E22-R601					
E22-R603	A	130	P601	16	OBSERVE HPCS FLOW
E22A-F004	A	120	P601	16	POSITION OPEN THE HPCS PUMP INJECT SHUT OFF VALVE
E22A-F004	A	150	P601	16	OBSERVE VALVE INDICATIONS FOR HPCS
E22A-F004	A	2170	P601	16	POSITION TO OPEN HPCS INJECT SHUT OFF VALVE
E22A-F004	A	2200	P601	16	POSITION TO OPEN HPCS INJECTION SHUT-OFF VALVE
E22A-F004	A	2230	P601	16	POSITION TO OPEN HPCS INJECTION SHUT-OFF VALVE
E22A-F004	C	250	P601	16	POSITION TO CLOSE THE HPCS INJECTION SHUTOFF VALVE
E22A-F004	D	650	P601	16	POSITION TO CLOSE HPCS PUMP SHUTOFF INJECTION VALVE

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
E22A-F011	D	640	P601	16	POSITION TO OPEN HPCS TEST RETURN TO CST VALVE
E22A-F004	A	780	P601	16	POSITION TO CLOSED HPCS INJECTION VALVE
E51-C0021, R603, R604, R601, R606	B	1425	P601	21	MONITOR RCIC PARAMETERS TURBINE SPEED, TURBINE EXHAUST PRESSURE, RCIC PUMP SUCTION PRESSURE, DISCHARGE PRESSURE, RCIC FLOW
E51-C0021, R603, R604, R601, R606	B	1455	P601	21	INFORM SHIFT FOREMAN RCIC TURBINE RUNNING AND FLOW INCREASING
E51-F0022 E51-F0059	B	1625	P601	21	POSITION TO CLOSE RCIC TEST FLOW CONTROL VALVE TO CONDENSATE STORAGE TANK VALVE
E51-F022	B	1427	P601	21	ADJUST POSITION ON RCIC TEST FLOW CONTROL VALVE TO CONDENSATE STORAGE TANK
E51-F022	B	1430	P601	21	ADJUST RCIC TEST FLOW CONTROL VALVE TO CONDENSATE STORAGE TANK
E51-F045	B	1424	P601	21	POSITION TO OPEN RCIC TURBINE STEAM SUPPLY
E51-F059	B	1426	P601	21	POSITION TO OPEN RCIC TEST RETURN TO CONDENSATE STORAGE TANK VALVE
E51-F076 E51-F063	D	630	P601	21	POSITION TO CLOSE RCIC STEAM LINE WARM-UP ISOLATION VALVE AND RCIC AND RHR ST SUPPLY INBOARD ISOLATION VALVE
E51-F022	B	1432	P601	21	ADJUST RCIC TEST FLOW CONTROL VALVE TO CONDENSATE STORAGE TANK
E51-F045	B	1615	P601	21	POSITION TO CLOSE RCIC TURBINE STEAM SUPPLY SHUTOFF VALVE
E51-R600	D	370	P601	21	POSITION TO MANUAL DECREASE RCIC PUMP FLOW CONTROLLER
E51-R606	C	110	P601	21	OBSERVE RCIC SYSTEM
E61-F046	B	1423	P601	21	POSITION TO OPEN RCIC TURBINE LUBE OIL COOLING WATER SUPPLY VALVE
ELECTRICAL BREAKERS	D	200	P600	04	VERIFY TRIP OF RECIRCULATION PUMPS
FULL CORE DISPLAY	D	80	P600	05	VERIFY RODS DID NOT GO IN
FULL CORE DISPLAY	D	110	P600	05	VERIFY RODS DID NOT GO IN
FULL CORE DISPLAY	D	300	P600	05	INFORM SHIFT FOREMAN CANNOT INSERT RODS MANUALLY
633-C001	A	1500	P600	01	POSITION TO START RWCU RECIRC PUMP A & B
C33-C001B					
633-C001A&B	A	2520	P600	01	POSITION TO OPEN THE RWCU RECIRC PUMP A AND B
633-F001, 4, 20, 34, 39, 53, 54, 40	A	2450	P601	16	POSITION TO OPEN THE RWCU ISOLATION VALVES
633-F001, F004, F053, F 054	A	1830	P601	18	POSITION TO CLOSE THE REACTOR WATER CLEAN-UP ISOLATION VALVES
633-F100	A	2215	P600	01	POSITION TO CLOSE RWCU RECIRC LOOP A AND B SUCTION VALVES
633-F106					
633-F039	A	1820	P601	18	POSITION TO CLOSE THE REACTOR WATER CLEAN-UP ISOLATION VALVES
F034					
F020					
F040					
633-R600	A	2240	P600	03	OBSERVE REACTOR WATER LEVEL
GP1	C	30	P600	05	POSITION TO ARM AND DEPRESS THE MANUAL SCRAM PUSHBUTTON
GP2					
GP3					
GP4					
GROUP 1, 2, 3, AND 4	D	40	P600	05	POSITION TO ARM AND DEPRESS MANUAL SCRAM PUSHBUTTONS
GROUP 1, 2, 3, AND 4	D	100	P600	05	POSITION THE MANUAL SCRAM PUSHBUTTONS
HI WTR LVL RESET'S	B	730	P600	03	POSITION TO RESET HIGH WATER LEVEL TRIPS A, B, AND C
HIGH DW PRESS, RESET	A	1710	P601	19	POSITION TO RESET HIGH DRYWELL PRESSURE RESET A AND B
HPCS MAN. INIT.	E	60	P601	16	POSITION TO ARM AND DEPRESS HPCS MANUAL INITIATION PUSHBUTTON
E21-R603					
E21-R601					

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
HPCS MON. INIT.	A	80	P601	21	POSITION TO START HPCS SYSTEM
HPCS INIT. RESET					
E22-R616	A	2220	P601	16	POSITION TO RESET HPCS HIGH WATER LEVEL RESET
HPCS RESET	A	1350	P614	00	POSITION TO RUN RECIRC HYDRAULIC PUMPS
HPU	A	440	P863	72	OBSERVE STATUS OF DRYWELL COOLERS
HVC-A0035C, HVC-A0019	A				
E					
ICMS-PR21, AR25A, TX14	A	620	P808	83/84	OBSERVE DRYWELL INDICATION
2A, TX142B					
ICMS-PR28	C	265	P808	83	MONITOR CONTAINMENT PRESSURE
ICMS-PR2A	A	770	P808	83	OBSERVE DRYWELL PRESSURE
ICMS-PR2A	A	870	P808	83/84	OBSERVE DRYWELL PRESSURE
ICMS-PR2A	C	790	P808	83	INFORM CONTROL ROOM CREW 3 POUNDS IN DRYWELL
ICMS-PR2B	C	775	P808	83	INFORM SHIFT FOREMAN CONTAINMENT/DRYWELL DP IS ZERO
ICMS-TRV42A	A	1060	P808	83	OBSERVE DRYWELL TEMPERATURE TREND
ICNM-P145A, ICNM-P145	A	670	P680	02	INFORM CREW CONDENSER VACUUM IS AT 24 INCHES OF HG.
B					
ICNM-P1A, ICNM-P1B,	A	20	P680	02	OBSERVE CONDENSATE PUMPS TRIPED
ICNM-P1C					
ICNM-P1A, B, & C	A	370	P680	02	ATTEMPT TO START CONDENSATE
ICNM-P145A, P1105, P14	A	25	P680	02	OBSERVE CONDENSATE SYSTEM
5B, P1133, A-ICNM007, B					
07, A-KNMC07, A-INDLA0					
ICPM-MOV2A, 2B, 4A, 4B,	B	1290	P863	71	POSITION TO OPEN INBOARD AND OUTBOARD HX MIXING ISOLATION VALVES
3A, 1A, 3B, 1B					
ICPM-MOV4A,	A	1100	P863	71	POSITION TO OPEN DRYWELL HYDROGEN MIXING ISOLATION VALVES
ICPM-MOV2A					
INB ISOL RESET,	B	480	P601	19	POSITION TO RESET INBOARD AND OUTBOARD ISOLATION SEAL IN RESETS
OUTBD ISOL RESET					
INBD & OUTBD ISOL.	A	1150	P601	19	POSITION INBOARD AND OUTBOARD ISOLATIONS RESETS
RESETS					
INBD ISOL. RESET	A	1600	P601	19	POSITION TO RESET INBOARD AND OUTBOARD ISOLATION RESET SWITCHES
OUTBD ISOL. RESET					
INBD. ISOL. RESET,	B	1057	P601	19	POSITION TO RESET INBOARD AND OUTBOARD ISOLATION RESETS
OUTBD. ISOL. RESET,					
INBD. ISOL. RESET,	B	1065	P601	19	POSITION TO RESET INBOARD AND OUTBOARD ISOLATION RESETS
OUTBD. ISOL. RESET,					
INBD. ISOL. RESET,	D	560	P601	19	POSITION TO RESET INBOARD AND OUTBOARD ISOLATION SEAL IN RESETS
OUTBD. ISOL. RESET					
IRM A, E, B, F, C, G, D,	A	70	P680	06	MONITOR IRM'S & SRM'S
H SELECT					
POWER/DRIVE MODE					
APRM/IRM SW					
IRM INSERT	B	194	680	05	POSITION TO INSERT THE IRM'S AND SRM'S
IRM PB A, B, C, D,	C	140	P680	06	POSITION TO SELECT THE IRM'S
E, F, G, H					
IRM SELECT SWITCH	B	193	680	06	POSITION TO IRM THE IRM SELECT SWITCH
IRM, SRM, PB	A	2390	P680	06	POSITION TO DESELECT THE NEUTRON INSTRUMENTATION
ISFC-MOV121	A	1370	P870	55	POSITION TO OPEN RTN TO PRF CN PUMPS CONTAINMENT OUTBOARD ISOLATION

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
ISOL RESETS	A	2400	P601	19	POSITION TO RESET THE ISOLATION RESET SWITCHES
ISWP-MOV502A, 503A, 4A	A	1210	P870	55	POSITION OPEN CONTAINMENT UNIT COOLERS AND DRYWELL UNIT COOLERS A
, 5A					
LD-LQ RESET	JA	1720	P601	19	POSITION TO RESET ADS PRESSURE (LOW-LOW) RELIEF INHIBIT LOGIC A&B RESET
LOOP TEMP	A	1490	DMRB	DMRB	CALCULATE RECIRC SYSTEM DELTA-T'S FOR RESTART OF RECIRC SYSTEM
LOW LEVEL RESET'S	C	368	P680	19	POSITION TO A/B VESSEL LOW LEVEL RECIRC INTERLOCKS
LPCS INIT. REACT	A	1550	P601	21	POSITION TO RESET LPCS INITIATION
LPCS MAN. INIT.	A	200	P601	21	INITIATE LPCS
MANUAL SCRAM	E	20	P680	05	POSITION TO ARM AND DEPRESS MANUAL SCRAM PUSHBUTTONS
PUSHBUTTONS					
MANUAL SCRAM	B	190	P680	05	POSITION MANUAL SCRAM COLLARS TO ARM AND DEPRESS SWITCHES
SWITCHES					
MODE SWITCH	B	192	680	06	POSITION TO SHUTDOWN THE REACTOR MODE SWITCH
MODE SWITCH	C	45	P680	06	POSITION REACTOR MODE SWITCH TO SHUTDOWN
MOTION INHIBIT	A	2560	P680	04	POSITION TO RESET THE RECIRC A&B MOTION INHIBIT RESET
RESETS					
MOV40A	E	120	P001	00	VERIFY ISWP MOV40A (DISCHARGE) VALVE OPENS
MOV510A	E	140	P001	00	POSITION TO OPEN MOV510C AND MOV504A VALVES
MOV504A					
MOV55A	E	130	P001	00	POSITION TO OPEN RETURN TO STANDBY COOLING TOWER
OUTBD. ISOL. RESET,	A	555	P601	19	POSITION INBOARD AND OUTBOARD ISOLATION RESET
INBD. ISOL RESET					
P601	B	1880		16	INFORM SHIFT FOREMAN, STOPPING HPCS PUMP
PEN SELECTS	D	570	P680	06	POSITION TO ARM RED AND BLUE PEN RECORDER SELECTS
PMS	A	160	P680	05	OBSERVE REACTOR WATER LEVEL AND PRESSURE
PMS	A	575	P680	05	INFORM SHIFT SUPERVISOR OF DRYWELL AND RPV PRESSURE
PMS	A	590	P680	05	INFORM CREW OF RPV PRESSURE INCREASING
PMS	A	690	P680	06	DIAGNOSE DRYWELL TEMPERATURE
PMS	A	810	P680	05	DIAGNOSE RPV STATUS
PMS	A	880	P680	06	OBSERVE DRYWELL TEMPERATURE INDICATOR
PMS	A	1030	P680	06	OBSERVE DRYWELL INDICATIONS
PMS	A	1040	P680	120	REQUEST DRYWELL TEMPERATURE INFORMATION FROM RO
PMS	A	1050	P680	06	INFORM SHIFT SUPERVISOR OF DRYWELL TEMPERATURE
PMS	A	1080	P680	06	MONITOR DRYWELL TEMPERATURE
PMS	A	1090	P680	06	DECIDE TO START HYDROGEN MIXING SYSTEM
PMS	A	1130	P680	05	INFORM CREW OF DRYWELL PRESSURE AND TEMPERATURE
PMS	A	1200	P680	05	OBSERVE DRYWELL PRESSURE AND LEVEL
PMS	A	1540	P680	06	INFORM CREW OF DRYWELL PRESSURE
PMS	A	1780	P680	04	OBSERVE REACTOR WATER LEVEL
PMS	B	30	P680	05	INFORM SHIFT FOREMAN THAT REACTOR LEVEL AND PRESSURE ARE HOLDING
PMS	B	40	P680	06	INFORM SHIFT FOREMAN DRYWELL TEMPERATURE AND PRESSURE INCREASING
PMS	B	60	P680	06	INFORM SHIFT FOREMAN OF DRYWELL TEMPERATURE AND PRESSURE
PMS	B	80	P680	06	INFORM SHIFT FOREMAN OF TEMPERATURE AND PRESSURE
PMS	B	105	P680	05	INFORM SHIFT FOREMAN OF DRYWELL PRESSURE CONTINUING TO INCREASE
PMS	B	150	P680	05	MONITOR RECIRC FLOW
PMS	B	237	P680	05	OBSERVE FEEDWATER FLOW
PMS	B	465	P680	05	MONITOR REACTOR PRESSURE
PMS	B	640	P680	05	INFORM SHIFT FOREMAN REACTOR LEVEL IS 55 INCHES AND DECREASING
PMS	B	670	P680	05	INFORM SHIFT SUPERVISOR REACTOR WATER LEVEL DECREASING SLOWLY

I & C ALPHA LISTING

COMPONENT	SCEN	SEQ	PANEL	LOCAT	TASK & ELEMENT
PMS	B	700	P680	06	MONITOR DRYWELL/CONTAINMENT PRESSURE
PMS	B	860	P680	06	MONITOR DRYWELL PRESSURE
PMS	B	980	P680, P808	06	INFORM CREW DRYWELL PRESSURE DECREASING
PMS	B	1030	P680	05	INFORM SHIFT SUPERVISOR DOES NOT HAVE CONTROL OF REACTOR LEVEL WITH FEEDWATER SYSTEM
PMS	B	1230	P680	06	REQUEST STATUS OF DEPRESSURIZING PLANT AND MONITORS DRYWELL TEMPERATURE DECREASING
PMS	B	1270	P601	06	INFORM CREW DRYWELL TEMPERATURE HOLDING
PMS	B	1340	P680	05	INFORM CREW REACTOR LEVEL IS 45 INCHES
PMS	C	15	P680	06	MONITOR DRYWELL PRESSURE, TEMPERATURE, AND SUPPRESSION POOL LEVEL, CONTAINMENT TEMPERATURE, AND PRESSURE
PMS	C	70	P680	06	INFORM CR CREW VALUES OF DRYWELL PRESSURE, REACTOR PRESSURE, REACTOR LEVEL
PMS	C	120	P680	06	INFORM CR CREW OF REACTOR PRESSURE
PMS	C	160	P680	05	INFORM CR CREW OF REACTOR LEVEL INCREASING
PMS	C	240	P680	05	INFORM CR CREW OF REACTOR PRESSURE AND LEVEL
PMS	C	320	P680	06	INFORM SHIFT FOREMAN OF REACTOR PRESSURE AND LEVEL
PMS	C	450	P601	22	INFORM SHIFT FOREMAN DRYWELL PRESSURE TOO HIGH
PMS	C	815	P680/ 808	06	MONITOR CONTAINMENT PRESSURE
PMS, FULL CORE DISPLAY, C51-R603A, C51-R603B, C51-R603C, PMS, REAC. SYS. MODE A SW., CORE MAP, RODS IN	C	46	P680	05	VERIFY REACTOR SCRAM
PMS, C33-R608	C	65	P680	05	MONITOR REACTOR PRESSURE AND LEVEL
PMS, CORE MAP	B	200	P680	05	VERIFY SCRAM
PMS, FULL CORE DISPLAY	C	20	P680	05	INFORM CONTROL ROOM CREW THE REACTOR HAS SCRAMMED
PMS C33-R605	B	1310	P680	04	INFORM SHIFT FOREMAN REACTOR PRESSURE DECREASING
PMS C33-R608	B	1170	P680	04	INFORM SHIFT FOREMAN STARTING SECOND REACTOR FEEDWATER PUMP AND REACTOR LEVEL DECREASING
PMS C33-R608	B	1600	P680	04	MONITOR RPV TEMPERATURE, PRESSURE, AND LEVEL
PMS C33-R605	A	940	P680	06	OBSERVE DRYWELL TEMPERATURE TREND
POWER ON	C	190	P680	06	POSITION TO ON THE DETECTOR POWER
RANGE SELECTS	D	600	P680	06	POSITION TO DOWN IRM RANGE SWITCHES
RCIC MAN. INIT.	A	75	P601	21	POSITION RCIC MANUAL INITIATE TO ARM POSITION
RCIC MAN. INIT. E51-R606	E	70	P601	21	POSITION TO ARM AND DEPRESS RCIC MANUAL INITIATION PUSHBUTTON
E51-R601					
REAC. SYS. MODE SWITCH	E	30	P680	06	POSITION TO SHUTDOWN REACTOR SYSTEM MODE SWITCH
REACTOR SYS MODE SWITCH	D	50	P680	06	POSITION TO SHUTDOWN REACTOR SYSTEM MODE SWITCH

I & C ALPHA LISTING

COMPONENT	SCEN	BEQ	PANEL	LOCAT	TASK & ELEMENT
RHR SYSTEM	B	490	P601	16	VERIFY ECCS SYSTEMS LINE-UP
INDICATING LIGHTS					
RHR VALVE AND PUMP	A	1410	P601	22	INFORM BOP TO TAKE RHR A OUT OF SUPPRESSION POOL COOLING AND INTO SHUTDOWN COOLING
INDICATOR LIGHTS	I				
RHR VALVES AND	D	490	P601	17	OBSERVE VALVE LINE-UP FOR RHR B
LIGHTS					
RODS IN	A	300	P680	05	VERIFY ALL RODS IN
RPS DIV 1, RPS DIV	A	60	P680	05	POSITION MANUAL SRM BUTTONS
2, RPS DIV 3, RPS					
DIV 4					
SCRAM PUSHBUTTONS	B	191	680	05	POSITION TO SCRAM THE MANUAL SCRAM PUSHBUTTONS
SMALL % OUTPUT METER	B	195	680	04	VERIFY RECIRC PUMP RUNBACK
SRM PB A, B, C, D	C	130	P680	06	POSITION TO SELECT THE SRM'S
SRV	A	210	P680	19	INFORMS CREW OF SRV INITIATION
SRV	D	150	DESK	DESK	REQUEST NUMBER OF SRV'S OPENING FROM BOP OPERATOR
SRV'S	A	950	P601	19	INFORM BOP TO OPEN ONE SRV
SRV'S	B	530	P601	19	ADJUST REACTOR PRESSURE WITH SRV'S
SRV'S	D	54	P601	19	VERIFY SRV'S HAVE LIFTED
SRV'S	D	55	P601	19	INFORM CONTROL ROOM CREW SAFETY RELIEF VALVES LIFTING
SRV'S	D	660	P601	19	OBSERVE SRV'S
SUPPLY BREAKERS	A	1420	P808	87 88	POSITION TO TRIP SUPPLY BREAKERS
SUPPLY BREAKERS	D	550	P877	32	POSITION TO CLOSE ALTERNATE SUPPLY BREAKERS
VARIOUS	A	2470	P601	20	OBSERVE RHR SYSTEM INDICATORS
VARIOUS	C	100	P863	73	OBSERVE INDICATIONS FOR SSGT
VARIOUS	C	425	P601	20	OBSERVE STATUS OF HPCS AND RHR SYSTEMS
VARIOUS	C	920	P863	71	OBSERVE CONTAINMENT/DRYWELL/HYDROGEN MIXING SYSTEMS
VARIOUS	C	990	P601	19	INFORM CONTROL ROOM CREW ADS VALVE OPENING

APPENDIX C

INSTRUMENTATION AND CONTROL
DATA SHEET EXAMPLES

System Name LPCS
 System designation E21
SUTOR

TABLE 1

INSTRUMENTATION
(Signals Originating Outside Control Room)

<u>Control Room Output Parameter</u>	<u>Control Room Output Device</u>	<u>I.D. #</u>	<u>Control Room Output Device Range & Units</u>	<u>Location of Information or Control Device</u>	<u>Output Device Signal Source</u>	<u>I.D. #</u>	<u>Direct (D) / Indirect (I)</u>	<u>SPDS</u>
Pump STATUS	INDICATING	E21-C001	AMPS 0-260A	P601-21	CT		D	yes
Flow	METER	E21-R600	0 to 8000 gal	P601-21	Flow Transmitter	FENC02 FENC02	I	NO
V.P.	INDICATING	E21-F005	o/c	↓	LS	33	D	NO
		E21-F011	o/c		LS	33	D	↓
		E21-F012	o/c		LS	33	D	

System Name HPCS
 System designation E22
China

TABLE 1

INSTRUMENTATION
 (Signals Originating Outside Control Room)

Control Room Output Parameter	Control Room Output Device	I.D. #	Control Room Output Device Range & Units	Location of Information or Control Device	Output Device Signal Source	I.D. #	Direct (D) / Indirect (I)	SCS
Ramp STATUS	Indicating	E22-C001	Lights	P601-16	BRK Aux. switch	52	D	NO
V.P.	"	E22-F004	Lights	P601-16	Limit switch	33	D	NO
Pressure	METER	E22-R601	0-1500 psi	↓	Press Transmitter	E22APIND01	D	NO
Flow	METER	E22-R603	0-7000 gpm		Flow element	E22AFEND07	I	NO
V.P.	Indicating	E22-F011	Lights		Limit switch	33	D	NO

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PaO

INSTRUMENTATION

(Signals Originating Outside Control Room)

Control Room Output Parameter	Control Room Output Device	I.D. #	Control Room Output Device Range & Units	Location of Information or Control Device	Output Device Signal Source	I.D. #	Remarks
Speed	meter	ESI-C002-1	0-6000 RPM	P601-21	MAGNETIC PICKUP	API1	ESI EAC018
Flow	meter	ESI-R606	0-800 gpm		Flow XMT R	ESI-N-003	ESI EAC04
Pressure	meter	ESI-R601	0-1500 PSI ₁₀		PRES XMT R	ESI-N-50	—
Pressure	meter	ESI-R604	0-85 PSI ₁₀		PRES XMT R	ESI-N-52	—
Pressure	meter	ESI-R603	0-100 PSI		PRES XMT R	ESI-N-56A	ESI EAC07
Pressure	meter	ESI-R602	0-1500 PSI		Pressure XMT R	ESI-N-007	ESI EAC02
V.P.	Indicating	ESI-F022			LIMIT SWITCH	33-3/33-7	ESI EAC05
		ESI-F029			"	"	—
		ESI-F045			"	"	ESI EAC06
		ESI-F076			"	"	ESI EAC04
		ESI-F063			"	"	ESI EAC07
		ESI-F046			"	"	ESI EAC07

Frank-Wen Pai

8/10/84

~~Substrate trip count~~

System Name Feedwater System
 System designation FWS

TABLE 1

INSTRUMENTATION
 (Signals Originating Outside Control Room)

Control Room Output Parameter	Control Room Output Device	I.D. #	Control Room Output Device Range & Units	Location of Information or Control Device	Output Device Signal Source	I.D. #	Direct (D) / Indirect (I)	SPDS
Pump STATUS	Indicating	1FWS-PIA	ON/OFF/TRIP	P680-03	Pump Bkr	52-1FWSA01	D	Y (supply head)
Pump STATUS	Indicating	1FWS-PIB	ON/OFF/TRIP	P680-03	Aux Controls	1X-1FWSA01	D	Y
Pump STATUS	Indicating	1FWS-PI C	ON/OFF/TRIP	P680-03	↓	52-1FWSB01	D	Y
V.P.	Indicating	1FWS-MOV26A	O/C	P680-03	↓	1X-1FWSB01	D	Y
V.P.	Indicating	1FWS-MOV26B	O/C	P680-03	Limit Switches	52-1FWSB02	D	Y
					↓	33-1FWSB04	D	Y

System Name Kx Water Cleanup
 System designation G33
Chion

TABLE 1

INSTRUMENTATION
 (Signals Originating Outside Control Room)

Control Room Output Parameter	Control Room Output Device	I.D. #	Control Room Output Device Range & Units	Location of Information or Control Device	Output Device Signal Source	I.D. #	Direct (D)/Indirect (I)	SPDS
Pump status	Indicating	G33-C001A	Lights	P680-01	BRK AUX switch	52	D	NO
Pump status		G33-C001B	"	P680-01	"	52	D	NO
V.P.		G33-F001	"	P601-16	Limit switch	33	D	NO
		G33-F004	"		"	"	D	NO
		G33-F028	"		"	"	D	NO
		G33-F034	"		"	"	D	NO
		G33-F039	"		"	"	D	NO
		G33-F053	"		"	"	D	NO
		G33-F054	"		"	"	D	NO
		G33-F040	"		"	"	D	NO
		G33-F100	"	P680-01	"	"	D	NO
		G33-F106	"		"	"	D	NO

System Name _____
System Designation B33

TABLE 2

CONTROLS
(Signals Originating Inside Control Room)

<u>Device, Parameter or Display Controlled</u>	<u>Control Room Control Device</u>	<u>I.D. #</u>	<u>Control Device States</u>	<u>Location of Device</u>	<u>Direct/ Indirect</u>
VALVE	push button	B33-F023A	close/open	P680-04	
VALVE	push button	B33-F023B	close/open	P680-04	
pump	push button	B33-C001A	STOP-START	P680-04	
pump	push button	B33-C001B	STOP-START	P680-04	

unless otherwise
noted, all controls
are Direct

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8/27/84

System Name _____
System Designation CII

TABLE 2

CONTROLS

(Signals Originating Inside Control Room)

<u>Device, Parameter or Display Controlled</u>	<u>Control Room Control Device</u>	<u>I.D. #</u>	<u>Control Device States</u>	<u>Location of Device</u>	<u>Direct/ Indirect</u>
pump	SWITCH	CII-COOL A	STOP/NORMAL/START	PG01-22	
pump	SWITCH	CII-COOL B	STOP/NORMAL/START	PG01-22	

System Name _____
System Designation C33

TABLE 2

CONTROLS
(Signals Originating Inside Control Room)

<u>Device, Parameter or Display Controlled</u>	<u>Control Room Control Device</u>	<u>I.D. #</u>	<u>Control Device States</u>	<u>Location of Device</u>	<u>Direct/ Indirect</u>
FEED REG. VALVE	Controller	C33-R600 C33-R601A C33-R601B C33-R601C C33-R602	AUTO-manual	P680-03	

System Name _____
 System Designation E12

TABLE 2

CONTROLS
 (Signals Originating Inside Control Room)

Device,
 Parameter
 or Display
 Controlled

Control Room
 Control Device

I.D. #

Control Device
 States

Location
 of Device

Direct/
 Indirect

MOV



Pump



MOV



SWITCH



Key Switch

SWITCH



SWITCH



1E12-F068B

1E12-F068A

1E12-F042A

1E12-F004A

E12-C002A

E12-C002B

E12-C002C

E12-F003

E12-F048

E12-F006A

E12-F009

E12-F011A

E12-F024A

E12-F024B

E12-F027A

E12-F027B

E12-F027C

O/C *

O/C *

Close/Auto/Open

O/C *

STOP/AUTO/START



C/O *

C/O *

close/open

C/O *

C/O *

C/O *

C/O *

C/O *

C/O *

C/O *

P870-56

P870-55

P601-20

P601-20

P601-20

P601-17

P601-17

P601-20

P601-20

P601-20

P601-20

P601-20

P601-20

P601-17

P601-20

P601-17

P601-17

* Spring RETURN TO MID

System Name _____
 System Designation E12

TABLE 2

CONTROLS
 (Signals Originating Inside Control Room)

Device,
 Parameter
 or Display
 Controlled

MOV



Control Room
 Control Device

SWITCH



I.D. #

Control Device
 States

Location
 of Device

Direct/
 Indirect

E12-F040	C/O	P601-20
E12-F049	C/O	P601-20
E12-F042B	C/LOSE/Auto/Open	P601-17
E12-F042C	CLOSE/Auto/open	P601-17
E12-F047A	C/O	P601-20
E12-F048A	CLOSE/Auto/OPEN	P601-20
E12-F053A		P601-20
E12-F053B		P601-17
E12-F064A		P601-20
E12-F074A	C/O	P601-20
E12-F073A	C/O	P601-20

APPENDIX D

EQUIPMENT CHARACTERISTIC FORMS

EQUIPMENT CHARACTERISTICS

Display Characteristics					
I & C (Equipment) Identification	Parameter	Range	Units	Scale Unit/Type	Control
P601 621-F005	UPCS injection shut-off valve				close, auto, open
P601 621-F041D	MAIN STEAM LINE A 425				close, auto, open
P601 621-F047A	MAIN STEAM LINE C				close, auto, open
P601 621-F047C	MAIN STEAM LINE B				close, auto, open
P601 621-F051C	SAFETY RELIEF VALVE				close, auto, open
P601 621-F051G	MAIN STEAM LINE C				close, auto, open
P601 621-F051B	MAIN STEAM LINE B				close, auto, open
P601 621-F051D	MAIN STEAM LINE A				close, auto, open
P601 621-F041B	SAFETY RELIEF VALVE				close, auto, open
P601 621-R605	MAIN STEAM LINE B				close, auto, open
P601 621-R610	MAIN STEAM LINE A				close, auto, open
P601 621-R615	MAIN STEAM LINE C				close, auto, open
P601 621-R620A	SAFETY RELIEF VALVE				close, auto, open
P601 621-R620B	SAFETY RELIEF VALVE				close, auto, open
P601 621-F004	MAIN STEAM LINE B				close, auto, open
P601 621-F008	MAIN STEAM LINE A				close, auto, open
P601 621-F009	MAIN STEAM LINE C				close, auto, open
P601 621-F010	SAFETY RELIEF VALVE				close, auto, open
P601 621-F011	MAIN STEAM LINE B				close, auto, open
P601 621-F012	MAIN STEAM LINE A				close, auto, open
P601 621-F013	MAIN STEAM LINE C				close, auto, open
P601 621-F014	SAFETY RELIEF VALVE				close, auto, open
P601 621-F015	MAIN STEAM LINE B				close, auto, open
P601 621-F016	MAIN STEAM LINE A				close, auto, open
P601 621-F017	MAIN STEAM LINE C				close, auto, open
P601 621-F018	SAFETY RELIEF VALVE				close, auto, open
P601 621-F019	MAIN STEAM LINE B				close, auto, open
P601 621-F020	MAIN STEAM LINE A				close, auto, open
P601 621-F021	MAIN STEAM LINE C				close, auto, open
P601 621-F022	SAFETY RELIEF VALVE				close, auto, open
P601 621-F023	MAIN STEAM LINE B				close, auto, open
P601 621-F024	MAIN STEAM LINE A				close, auto, open
P601 621-F025	MAIN STEAM LINE C				close, auto, open
P601 621-F026	SAFETY RELIEF VALVE				close, auto, open
P601 621-F027	MAIN STEAM LINE B				close, auto, open
P601 621-F028	MAIN STEAM LINE A				close, auto, open
P601 621-F029	MAIN STEAM LINE C				close, auto, open
P601 621-F030	SAFETY RELIEF VALVE				close, auto, open
P601 621-F031	MAIN STEAM LINE B				close, auto, open
P601 621-F032	MAIN STEAM LINE A				close, auto, open
P601 621-F033	MAIN STEAM LINE C				close, auto, open
P601 621-F034	SAFETY RELIEF VALVE				close, auto, open
P601 621-F035	MAIN STEAM LINE B				close, auto, open
P601 621-F036	MAIN STEAM LINE A				close, auto, open
P601 621-F037	MAIN STEAM LINE C				close, auto, open
P601 621-F038	SAFETY RELIEF VALVE				close, auto, open
P601 621-F039	MAIN STEAM LINE B				close, auto, open
P601 621-F040	MAIN STEAM LINE A				close, auto, open
P601 621-F041	MAIN STEAM LINE C				close, auto, open
P601 621-F042	SAFETY RELIEF VALVE				close, auto, open
P601 621-F043	MAIN STEAM LINE B				close, auto, open
P601 621-F044	MAIN STEAM LINE A				close, auto, open
P601 621-F045	MAIN STEAM LINE C				close, auto, open
P601 621-F046	SAFETY RELIEF VALVE				close, auto, open
P601 621-F047	MAIN STEAM LINE B				close, auto, open
P601 621-F048	MAIN STEAM LINE A				close, auto, open
P601 621-F049	MAIN STEAM LINE C				close, auto, open
P601 621-F050	SAFETY RELIEF VALVE				close, auto, open
P601 621-F051	MAIN STEAM LINE B				close, auto, open
P601 621-F052	MAIN STEAM LINE A				close, auto, open
P601 621-F053	MAIN STEAM LINE C				close, auto, open
P601 621-F054	SAFETY RELIEF VALVE				close, auto, open
P601 621-F055	MAIN STEAM LINE B				close, auto, open
P601 621-F056	MAIN STEAM LINE A				close, auto, open
P601 621-F057	MAIN STEAM LINE C				close, auto, open
P601 621-F058	SAFETY RELIEF VALVE				close, auto, open
P601 621-F059	MAIN STEAM LINE B				close, auto, open
P601 621-F060	MAIN STEAM LINE A				close, auto, open
P601 621-F061	MAIN STEAM LINE C				close, auto, open
P601 621-F062	SAFETY RELIEF VALVE				close, auto, open
P601 621-F063	MAIN STEAM LINE B				close, auto, open
P601 621-F064	MAIN STEAM LINE A				close, auto, open
P601 621-F065	MAIN STEAM LINE C				close, auto, open
P601 621-F066	SAFETY RELIEF VALVE				close, auto, open
P601 621-F067	MAIN STEAM LINE B				close, auto, open
P601 621-F068	MAIN STEAM LINE A				close, auto, open
P601 621-F069	MAIN STEAM LINE C				close, auto, open
P601 621-F070	SAFETY RELIEF VALVE				close, auto, open
P601 621-F071	MAIN STEAM LINE B				close, auto, open
P601 621-F072	MAIN STEAM LINE A				close, auto, open
P601 621-F073	MAIN STEAM LINE C				close, auto, open
P601 621-F074	SAFETY RELIEF VALVE				close, auto, open
P601 621-F075	MAIN STEAM LINE B				close, auto, open
P601 621-F076	MAIN STEAM LINE A				close, auto, open
P601 621-F077	MAIN STEAM LINE C				close, auto, open
P601 621-F078	SAFETY RELIEF VALVE				close, auto, open
P601 621-F079	MAIN STEAM LINE B				close, auto, open
P601 621-F080	MAIN STEAM LINE A				close, auto, open
P601 621-F081	MAIN STEAM LINE C				close, auto, open
P601 621-F082	SAFETY RELIEF VALVE				close, auto, open
P601 621-F083	MAIN STEAM LINE B				close, auto, open
P601 621-F084	MAIN STEAM LINE A				close, auto, open
P601 621-F085	MAIN STEAM LINE C				close, auto, open
P601 621-F086	SAFETY RELIEF VALVE				close, auto, open
P601 621-F087	MAIN STEAM LINE B				close, auto, open
P601 621-F088	MAIN STEAM LINE A				close, auto, open
P601 621-F089	MAIN STEAM LINE C				close, auto, open
P601 621-F090	SAFETY RELIEF VALVE				close, auto, open
P601 621-F091	MAIN STEAM LINE B				close, auto, open
P601 621-F092	MAIN STEAM LINE A				close, auto, open
P601 621-F093	MAIN STEAM LINE C				close, auto, open
P601 621-F094	SAFETY RELIEF VALVE				close, auto, open
P601 621-F095	MAIN STEAM LINE B				close, auto, open
P601 621-F096	MAIN STEAM LINE A				close, auto, open
P601 621-F097	MAIN STEAM LINE C				close, auto, open
P601 621-F098	SAFETY RELIEF VALVE				close, auto, open
P601 621-F099	MAIN STEAM LINE B				close, auto, open
P601 621-F100	MAIN STEAM LINE A				close, auto, open
P601 621-F101	MAIN STEAM LINE C				close, auto, open
P601 621-F102	SAFETY RELIEF VALVE				close, auto, open
P601 621-F103	MAIN STEAM LINE B				close, auto, open
P601 621-F104	MAIN STEAM LINE A				close, auto, open
P601 621-F105	MAIN STEAM LINE C				close, auto, open
P601 621-F106	SAFETY RELIEF VALVE				close, auto, open
P601 621-F107	MAIN STEAM LINE B				close, auto, open
P601 621-F108	MAIN STEAM LINE A				close, auto, open
P601 621-F109	MAIN STEAM LINE C				close, auto, open
P601 621-F110	SAFETY RELIEF VALVE				close, auto, open
P601 621-F111	MAIN STEAM LINE B				close, auto, open
P601 621-F112	MAIN STEAM LINE A				close, auto, open
P601 621-F113	MAIN STEAM LINE C				close, auto, open
P601 621-F114	SAFETY RELIEF VALVE				close, auto, open
P601 621-F115	MAIN STEAM LINE B				close, auto, open
P601 621-F116	MAIN STEAM LINE A				close, auto, open
P601 621-F117	MAIN STEAM LINE C				close, auto, open
P601 621-F118	SAFETY RELIEF VALVE				close, auto, open
P601 621-F119	MAIN STEAM LINE B				close, auto, open
P601 621-F120	MAIN STEAM LINE A				close, auto, open
P601 621-F121	MAIN STEAM LINE C				close, auto, open
P601 621-F122	SAFETY RELIEF VALVE				close, auto, open
P601 621-F123	MAIN STEAM LINE B				close, auto, open
P601 621-F124	MAIN STEAM LINE A				close, auto, open
P601 621-F125	MAIN STEAM LINE C				close, auto, open
P601 621-F126	SAFETY RELIEF VALVE				close, auto, open
P601 621-F127	MAIN STEAM LINE B				close, auto, open
P601 621-F128	MAIN STEAM LINE A				close, auto, open
P601 621-F129	MAIN STEAM LINE C				close, auto, open
P601 621-F130	SAFETY RELIEF VALVE				close, auto, open
P601 621-F131	MAIN STEAM LINE B				close, auto, open
P601 621-F132	MAIN STEAM LINE A				close, auto, open
P601 621-F133	MAIN STEAM LINE C				close, auto, open
P601 621-F134	SAFETY RELIEF VALVE				close, auto, open
P601 621-F135	MAIN STEAM LINE B				close, auto, open
P601 621-F136	MAIN STEAM LINE A				close, auto, open
P601 621-F137	MAIN STEAM LINE C				close, auto, open
P601 621-F138	SAFETY RELIEF VALVE				close, auto, open
P601 621-F139	MAIN STEAM LINE B				close, auto, open
P601 621-F140	MAIN STEAM LINE A				close, auto, open
P601 621-F141	MAIN STEAM LINE C				close, auto, open
P601 621-F142	SAFETY RELIEF VALVE				close, auto, open
P601 621-F143	MAIN STEAM LINE B				close, auto, open
P601 621-F144	MAIN STEAM LINE A				close, auto, open
P601 621-F145	MAIN STEAM LINE C				close, auto, open
P601 621-F146	SAFETY RELIEF VALVE				close, auto, open
P601 621-F147	MAIN STEAM LINE B				close, auto, open
P601 621-F148	MAIN STEAM LINE A				close, auto, open
P601 621-F149	MAIN STEAM LINE C				close, auto, open
P601 621-F150	SAFETY RELIEF VALVE				close, auto, open
P601 621-F151	MAIN STEAM LINE B				close, auto, open
P601 621-F152	MAIN STEAM LINE A				close, auto, open
P601 621-F153	MAIN STEAM LINE C				close, auto, open
P601 621-F154	SAFETY RELIEF VALVE				close, auto, open
P601 621-F155	MAIN STEAM LINE B				close, auto, open
P601 621-F156	MAIN STEAM LINE A				close, auto, open
P601 621-F157	MAIN STEAM LINE C				close, auto, open
P601 621-F158	SAFETY RELIEF VALVE				close, auto, open
P601 621-F159	MAIN STEAM LINE B				close, auto, open
P601 621-F160	MAIN STEAM LINE A				close, auto, open
P601 621-F161	MAIN STEAM LINE C				close, auto, open
P601 621-F162	SAFETY RELIEF VALVE				close, auto, open
P601 621-F163	MAIN STEAM LINE B				close, auto, open
P601 621-F164	MAIN STEAM LINE A				close, auto, open
P601 621-F165	MAIN STEAM LINE C				close, auto, open
P601 621-F166	SAFETY RELIEF VALVE				close, auto, open
P601 621-F167	MAIN STEAM LINE B				close, auto, open
P601 621-F168	MAIN STEAM LINE A				close, auto, open
P601 621-F169	MAIN STEAM LINE C				close, auto, open
P601 621-F170	SAFETY RELIEF VALVE				close, auto, open
P601 621-F171	MAIN STEAM LINE B				close, auto, open
P601 621-F172	MAIN STEAM LINE A				close, auto, open
P601 621-F173	MAIN STEAM LINE C				close, auto, open
P601 621-F174	SAFETY RELIEF VALVE				close, auto, open
P601 621-F175	MAIN STEAM LINE B				close, auto, open
P601 621-F176	MAIN STEAM LINE A				close, auto, open
P601 621-F177	MAIN STEAM LINE C				close, auto, open
P601 621-F178	SAFETY RELIEF VALVE				close, auto, open
P601 621-F179	MAIN STEAM LINE B				close, auto, open
P601 621-F180	MAIN STEAM LINE A				close, auto, open
P601 621-F181	MAIN STEAM LINE C				close, auto, open
P601 621-F182	SAFETY RELIEF VALVE				close, auto, open
P601 621-F183	MAIN STEAM LINE B				close, auto, open
P601 621-F184	MAIN STEAM LINE A				close, auto, open
P601 621-F185	MAIN STEAM LINE C				close, auto, open
P601 621-F186	SAFETY RELIEF VALVE				close, auto, open
P601 621-F187	MAIN STEAM LINE B				close, auto, open
P601 621-F188	MAIN STEAM LINE A				close, auto, open
P601 621-F189	MAIN STEAM LINE C				close, auto, open
P601 621-F190	SAFETY RELIEF VALVE				close, auto, open
P601 621-F191	MAIN STEAM LINE B				close, auto, open
P601 621-F192	MAIN STEAM LINE A				close, auto, open
P601 621-F193	MAIN STEAM LINE C				close, auto, open
P601 621-F194	SAFETY RELIEF VALVE				close, auto, open
P601 621-F195	MAIN STEAM LINE B				close, auto, open
P601 621-F196	MAIN STEAM LINE A				close, auto, open
P601 621-F197	MAIN STEAM LINE C				close, auto, open
P601 621-F198	SAFETY RELIEF VALVE				close, auto, open
P601 621-F199	MAIN STEAM LINE B				close, auto, open
P601 621-F200	MAIN STEAM LINE A				close, auto, open
P601 621-F201	MAIN STEAM LINE C				close, auto, open
P601 621-F202	SAFETY RELIEF VALVE				close, auto, open
P601 621-F203	MAIN STEAM LINE B				close, auto, open
P601 621-F204	MAIN STEAM LINE A				close, auto, open
P601 621-F205	MAIN STEAM LINE C				close, auto, open
P601 621-F206	SAFETY RELIEF VALVE				close, auto, open
P601 621-F207	MAIN STEAM LINE B				close, auto, open
P601 621-F208	MAIN STEAM LINE A				close, auto, open
P601 621-F209	MAIN STEAM LINE C				close, auto, open
P601 621-F210	SAFETY RELIEF VALVE				close, auto, open
P601 621-F211	MAIN STEAM LINE B				close, auto, open
P601 621-F212	MAIN STEAM LINE A				close, auto, open
P601 621-F213	MAIN STEAM LINE C				close, auto, open
P601 621-F214	SAFETY RELIEF VALVE				close, auto, open
P601 621-F215	MAIN STEAM LINE B				close, auto, open
P601 621-F216	MAIN STEAM LINE A				close, auto, open
P601 621-F217	MAIN STEAM LINE C				close, auto, open
P601 621-F218	SAFETY RELIEF VALVE				close, auto, open
P601 621-F219	MAIN STEAM LINE B				close, auto, open
P601 621-F220	MAIN STEAM LINE A				close, auto, open
P601 621-F221	MAIN STEAM LINE C				close, auto, open
P601 621-F222	SAFETY RELIEF VALVE				close, auto, open
P601 621-F223	MAIN STEAM LINE B				close, auto, open
P601 621-F224	MAIN STEAM LINE A				close, auto, open
P601 621-F225	MAIN STEAM LINE C				close, auto, open
P601 621-F2					

EQUIPMENT CHARACTERISTICS

[illegible]

EQUIPMENT CHARACTERISTICS

I & C (Equipment) Identification	Display Characteristics				Control State(s)
	Parameter	Range	Units	Scale Units/Type	
⁹⁹ P601 E12-R602B	RHR SW TO HX B Flow	0 to 100	GPM x 10	1000/2000	□
⁹⁹ P601 E12-R601	RHR TEMPERATURE	0 to 600	°F	10/50/100	R11, close
⁹⁹ P601 E12-R602A	RHR A HX Level	0 to 100	Percent	2/10/20	□
⁹⁹ P601 E12-R605	RHR HX TO RCH P601	0 to 200	PSI	5/25/50	□
⁹⁹ P601 E12-R604A	RHR A HX Pressure	0 to 600	PSI	10/50/100	□
⁹⁹ P601 E12-R604	HX OUT J Point	0 to 100	Percent	2/10/20	□
⁹⁹ P601 E21-C001	LPDS Pump				stop, auto, start
⁹⁹ P601 E22-C001	HPDS Pump auto for RCH #2 control				trip, manual, close
⁹⁹ P601 E21-F005	LPDS Injection shutdown valve				close, auto, open
⁹⁹ P601 E21-F012	LPDS Test return to supply pool				close, auto, open
⁹⁹ P601 E21-R600	LPDS Pump flow	0 to 1000	GPM x 10	200	□
⁹⁹ P601 E22-R603	HPDS Flow	0 to 200	GPM x 10	100	□
⁹⁹ P601 E22-R601	Pump Direct Position	0 to 15	PSI x 100	2/1	□
⁹⁹ P601 E22A-F004	HPDS Pump % shutdown valve				close, auto, open
⁹⁹ P601 E22A-F011	HPDS Test return to RST				close, auto, open
⁹⁹ P601 E51-F022	RCH Test return to RCHS				close, auto, open
⁹⁹ P601 E51-F059	RCH Test return to RCHS				close, auto, open
⁹⁹ P601 E51-F045	RCH Test return to RCHS				close, auto, open
⁹⁹ P601 E51-F076	RCH Test return to RCHS				close, auto, open
⁹⁹ P601 E51-F063	RCH Test return to RCHS				close, auto, open
⁹⁹ P601 E51-C002-1	Turbine speed RPH				close, auto, open
⁹⁹ P601 E51-R601	RCH pump direct press	0 to 150	PSI x 10	2/10/30	□
⁹⁹ P601 E51-R603	RCH Turbines press	0 to 200	PSI	5/25/50	□
⁹⁹ P601 E51-R604	RCH pump test press	85 to 0 to 30	PSI - VAC	15	□
⁹⁹ P601 E51-R606	RCH pump flow	0 to 800	GPM	10/100/200	□

EQUIPMENT CHARACTERISTICS

I & C (Equipment) Identification		Display Characteristics			Control	
	Parameter	Range	Units	Scale Units/Type	State(s)	
V ₂ P601	EST-R400 PIC pump flow controller				collect controller	
B ₁ P601	RIC tank level				close, auto, open	
B ₄ P601	REC water supply				close, normal, open	
B ₄ P601	G33-F001 clean-up sys valve				close, normal, open	
B ₄ P601	G33-F004 clean-up sys valve				close, normal, open	
B ₄ P601	G33-F003 clean-up sys valve				close, normal, open	
B ₄ P601	G33-F005 clean-up sys valve				close, normal, open	
B ₄ P601	G33-F039 clean-up sys valve				close, normal, open	
B ₄ P601	G33-F040 clean-up sys valve				close, normal, open	
B ₄ P601	G33-F034 clean-up sys valve				close, normal, open	
B ₄ P601	G33-F028 clean-up sys valve				close, normal, open	
" P601	E22-R616 HPS pump motor	0 to 400	AC amperes	10/50/100		
" P601	HPR's manual initiation			red push button	disarm, arm	
" P601	HRS initiation reset			black push button	off, auto, open	
B ₂ P601	B21-F041A main steam line A safety relief valve				off, auto, open	
B ₂ P601	B21-F041C main steam line C safety relief valve				off, auto, open	
B ₂ P601	B21-F041D main steam line D safety relief valve				off, auto, open	
B ₂ P601	B21-F041F main steam line F safety relief valve				off, auto, open	
B ₂ P601	B21-F041G main steam line G safety relief valve				off, auto, open	
B ₂ P601	B21-F041L main steam line L safety relief valve				off, auto, open	
B ₂ P601	B21-F047B main steam line B safety relief valve				off, auto, open	
B ₂ P601	B21-F047D main steam line D safety relief valve				off, auto, open	

Display Characteristics					
I & C (Equipment) Identification	Parameter	Range	Units	Scale Units/Type	Control State(s)
P680 1FWS-HOVZGA	R4 FWP PIA DISC				close, open
P680 1FWS-P19A	RAC FWP PA	0 to 2000	amps	50/250/500	//
P680 1FWS-PIB	RAC FWP PAIR AMPS	0 to 400	amperes	5/50/100	//
P680 1FWS-HOVZGB	R4 FWP PIB DISC				close, open
P680 1FWS-P17B	R4 FWP PIB DISC	0 to 2000	amps	50/250/500	//
P680 1FWS-PIC	RAC FWP PAIR AMP	0 to 400	amperes	5/50/100	//
P680 IHRX-PIA	MOTOR AMPS	0 to 200	amperes	5/25/50	//
P680 IHDL-PIB	MOTOR AMPS	0 to 200	amperes	5/25/50	//
P680 ITAG-TGT	Tuning Gear Mot				pull back stop, auto, start
P680 ITHO-JE110	MAIN TURBINE COND				DISTAL EXHAUST
P680 B2I-R6A	W.H.O range water level	+60 to -160	inches	25	//
P680 G33-COO1A	POWER RCRC Pump A				stop, start
P680 G33-COO1B	POWER RCRC Pump B				stop, start
P680 B33-COO1A	RCRC PAPA PIR BEUR 4A				trip, close
P680 B33-COO1B	RCRC PMP B PIR BEUR 4B				trip, close
P680 B33-FR22A	RCRC PAPA Section Valve				close, open
P680 B33-FR22B	RCRC PMP B Section Valve				close, open
P680 B33-K602	RCRC Flow Control	+20 to -20	percent flux error	2/10	lock, man
P680 B33-K603A	RCRC COMP B Flow Control				auto, man
P680 B33-K603B	RCRC COMP B Flow Control				auto, man
P680 C33-R601D	Flow Control				close, open
P680 C33-R605	REA Press	0 to 12	psi x 100	1/5/10	//
P680 C33-R606A	Fedwater flow reactor fuel A	0 to 60	inches	1/5/10	//
P680 C33-R606B	Fedwater flow reactor fuel B	0 to 60	inches	1/5/10	//
P680 C33-R606C	Fedwater flow reactor fuel C	0 to 60	inches	1/5/10	//

EQUIPMENT CHARACTERISTICS

I & C (Equipment) Identification	Display Characteristics				Control
	Parameter	Range	Units	Scale Units/Type	
⁰³ P600 C33-R609	REAC + Tug 1 st stage pos	0 to 6 556/105 R		/	roll, short
⁰³ P680 C33-R609	Reactor Level	0 to 19 2660		.5/1 2/5/10	roll, short (remote) (remote) (remote) (remote)
⁰⁷ P680 C51-R603A	IRM APPM Level				
⁰⁷ P680 C51-R603B	IRM APPM Level				
⁰⁷ P680 C51-R603C	IRM APPM Level				
⁰⁸ P680 C51-R603D	IRM APPM Level				
⁰¹ P680 G33-F100	Reactor Recirculation				close, open
⁰¹ P680 G33-F106	Reactor Recirculation				close, open
⁰¹ P680 ICNM-P1A	Condensate				stop, start
⁰² P680 ICNM-P1B	Condensate				stop, start
⁰¹ P680 ICNM-P1C	Condensate				stop, start
⁰² P680 ICNM-P145A	Condensate Press	0 to 30	inches Hg	.5/25/5	//
⁰² P680 ICNM-P145B	Condensate Press	0 to 30	inches Hg	.5/25/5	//
⁰¹ P680 ICNM-P1105	Condensate Press	0 to 80	PSIG	2/10/20	//
⁰¹ P680 ICNM-P1133	Condensate Press	0 to 80	PSIG	2/10/20	//
⁰¹ P680 A-ICNMA07	Motor AMPs	0 to 200	amperes	5/25/50	//
⁰¹ P680 A-ICNMB07	Motor AMPs	0 to 200	amperes	5/25/50	//
⁰² P680 A-ICNMC07	Motor AMPs	0 to 200	amperes	5/25/50	//
⁰² P680 A-INDLAD6	Motor AMPs	0 to 200	amperes	5/25/50	//
⁰¹ P680 IFWS-P1A	Lube sys start				start
⁰¹ P680 IFWS-P1B	REAC feedwater pump				stop, start
⁰¹ P680 IFWS-P1C	Lube sys start				start
⁰¹ P680 IFWS-P1D	REAC feedwater pump				stop, start
⁰¹ P680 IFWS-P1E	Lube sys start				start
⁰¹ P680 IFWS-P1F	REAC feedwater pump				stop, start

EQUIPMENT CHARACTERISTICS

I & C (Equipment) Identification	Display Characteristics				Scale Units/Type	Control State(s)
	Parameter	Range	Units			
⁰² P808 ICMS-TR2A Drywell Pressure	0 to 50	PSIA			1/5/10	roll chart
⁰¹ P808 ICMS-TR142A Contant Atmos Temp						roll chart
⁰³ P808 ICMS-PR2B Drywell Pressure	0 to 100	PSI			1/5/10	roll chart
⁰³ P808 ICMS-TR40B Supper Pwr Temp		°F				roll chart
⁰³ P808 ICMS-TR24B Supper Pwr Temp		°F				roll chart
⁰¹ P808 ICMS-TR24A Supper Pwr Temp		°F				roll chart
⁰³ P808 ICMS-4123B Supper Pwr Level	-2 to +2	feet			1/5/10	roll chart
⁰² P808 ICMS-TR44A Drywell Atmos Temp		°F				roll chart
⁰¹ P808 ICMS-TR41B Drywell Atmos Temp		°F				roll chart
⁰³ P808 ICMS-TR40A Supper Pwr Temp		°F				roll chart
⁰² P808 ICMS-TR42A Contant Atmos Temp		°F				roll chart
⁰¹ P808 ICMS-TR42B Contant Atmos Temp		°F				roll chart
⁰³ P808 ICMS-AR25A Contant drywell level type Reactor Hydro Power Ind V						roll chart
⁰³ P808 IRCS-H0V61A Reactor Hydro Power Ind V						close, open
⁰¹ P808 IRCS-H0V61B Reactor Hydro Power Ind V						close, open
⁰¹ P808 IRCS-H0V60A Reactor Hydro Power Ind V						close, open
⁰¹ P808 IRCS-H0V60B Reactor Hydro Power Ind V						close, open
⁰¹ P808 IRCS-H0V59A Reactor Hydro Power Ind V						close, open
⁰¹ P808 IRCS-H0V59B Reactor Hydro Power Ind V						close, open
⁰¹ P808 IRCS-H0V58A Reactor Hydro Power Ind V						close, open
⁰¹ P808 IRCS-H0V58B Reactor Hydro Power Ind V						close, open

EQUIPMENT CHARACTERISTICS

I & C (Equipment) Identification	Display Characteristics				Control
	Parameter	Range	Units	Scale Units/Type	State(s)
⁸¹ P863 ICPH-M0J2A	DW H2 MIXING IN OUTBD 1506				close, open
⁸¹ P863 ICPH-M0J2B	DW H2 MIXING IN OUTBD 1506				close, open
⁸¹ P863 ICPH-M0J4A	DW H2 MIXING IN INBD 1506				close, open
⁸¹ P863 ICPH-M0J4B	DW H2 MIXING IN INBD 1506				close, open
⁸² P863 ICPH-FN1A	DW H2 MIXING				stop, start
⁸² P863 ICPH-FN1B	DW H2 MIXING				stop, start
⁸² P863 ICPH-M0J1A	DW H2 MIXING OUT OUTBD 1506				close, open
⁸² P863 ICPH-M0J1B	DW H2 MIXING OUT OUTBD 1506				close, open
⁸² P863 ICPH-M0J3A	DW H2 MIXING OUT INBD 1506				close, OPEN
⁸² P863 ICPH-M0J3B	DW H2 MIXING OUT INBD 1506				close, OPEN
⁸² P863 IDRS-UC1D	Drywell unit clr				run, off, test
⁸² P863 IDRS-UC1E	Drywell unit clr				run, off, test
⁸² P863 IDRS-UC1F	Drywell unit clr				run, off, test
⁸² P863 IHUR-UC1C	Contant unit clr				stop, start
⁸⁴ P863 IHUC-A0D19E	C.R. char filter				close, auto, open
⁸⁴ P863 IHUC-A0D35C	U2 CR effluents outside air intake				close, open

EQUIPMENT CHARACTERISTICS

I & C (Equipment) Identification	Display Characteristics				Control
	Parameter	Range	Units	Scale Units/Type	State(s)
BS P870 ICCP-MOV153	CONTMT RETURN INBD ISOL				CLOSE, OPEN
BS P870 ICCP-MOV159	CONTMT RETURN OUTBD ISOL				CLOSE, OPEN
BS P870 ICCP-MOV142	Drywell Supply Isolation				CLOSE, OPEN
BS P870 ICCP-MOV169	Control Rod Drive Pump Supply V				CLOSE, OPEN
BS P870 ICCP-MOV163	Control Rod Drive Supply				CLOSE, OPEN
BS P870 ICCP-H01144	Drywell Return INBD ISOL				CLOSE, OPEN
BS P870 ICCP-MOV143	Drywell Return OUTBD ISOL				CLOSE, OPEN
BS P870 ICCP-MOV138	CONTMT Supply ISOLATION				CLOSE, OPEN
BS P870 ICNS-MOV125	Condensate Makeup Content ISOL				CLOSE, OPEN
BS P870 IDER-MOV127	Content + DW 48PT DR OUTBD ISOL				CLOSE, OPEN
BS P870 IWCS-MOV172	Backwash to-4 DR Content OUTBD ISOL				CLOSE, OPEN
BS P870 ISWP-MOV028	Content unit CLG supply				CLOSE, OPEN
BS P870 ISWP-MOV5038	Content unit CLG SUCE WTR RTH				CLOSE, OPEN
BS P870 ISWP-MOV5048	RPCW HEAT EXCH RETURN				CLOSE, OPEN
BS P860 ISWP-MOV5058	DIV 1 - DIV 2 CROSSOVER				CLOSE, OPEN
BS P860 IZAS-MOV106	CONTMT INSTR AIR ISOLATION				CLOSE, OPEN
BS P860 ISWP-MOV502A	CONTMT UNIT CLR				CLOSE, OPEN
BS P860 ISWP-MOV503A	CONTMT UNIT CLR SUCE WTR RTH				CLOSE, OPEN
BS P860 ISWP-MOV504A	RPCW SYSTEM RETURN				CLOSE, OPEN
BS P860 ISWP-MOV505A	DIV 1 - DIV 2 CROSSOVER				CLOSE, OPEN
BS P860 ISFC-MOV121	RTN TO PFEN PHPS CONTMT OUTBD ISOL				CLOSE, OPEN
BS P860 IE12-F068B	HT EXCH "B" SUCE WTR DISCH				CLOSE, OPEN
BS P860 IE12-F068A	HT EXCH "A" SUCE WTR DISCH				CLOSE, OPEN

EQUIPMENT CHARACTERISTICS

[illegible]

EQUIPMENT CHARACTERISTICS

I & C (Equipment) Identification	Display Characteristics				Control
	Parameter	Range	Units	Scale Units/Type	State(s)
PG01 E12-C002A	RHR PUMP MTR AMPS	0-150	AC AMPS	25/5	
PG01 E12-F003A	RHR A Shell side ^{OUTLET} VLV				close ^{NORMAL} OPEN
PG01 E12-F003B	" B " "				" " "
PG01 E12-F027A	" A INJ VLV				close AUTO OPEN
PG01 E12-F042C	C " "				" " "
PG01 E12-F073A	" A HX ^{SECOND VENT} To Supp Pool				close ^{NORMAL} OPEN
PG01 E12-F073B	" B HX "				
PG01 E12-F074A	" A HX ^{FIRST VENT} To Supp Pool				
PG01 E12-F074B	" B HX "				
PG01 E12-R611A	E12-F003A HX OUTLET VLV POS.	0-100	Percent	20/2	
PG01 E12-R611B	E12-F003B HX	↓	↓	↓	
PG01 E12-R611C	E12-F003C HX	↓	↓	↓	
PG08 1CMS-TR10A	SUPP Pool Temp	2-0-2	FEET	.5/.05	Green scale
	↓	0-200	°F	50/5	Blue & Red scales
PG08 1CMS-TR10B	SUPP Pool Temp	SAME AS A	FEET	SAME AS A	SAME AS A
	↓	↓	°F	↓	↓

APPENDIX E

EQUIPMENT SUITABILITY FORM

AND

ASSOCIATED HEDs

EQUIPMENT SUITABILITY HEDs

Completed by: BISHOP/Kennell/1006hDate: 8-10-84

TAW REF.		I&C Equipment Ident.	Info. not Appropriate	Direct Sys. Status Not Provided	Not Fully Useable	Comments
Scen.	Task I.D.					
A	Seq #670 JAL AF 843	See Task Analysis Data Sheets			✓	Mater's # ICM-PIAS A: O Are Loaded "ZACHES Hy. Abs"
A	Seq #680 JAL HED 844			✓		Present info in CR does not provide sufficient info for this task.
A	Seq #690 JAL HED 845	HED 230			✓	o/w temp. recorder on P808 in full scale at 200°F. Needs to go to at least 330°F.
A	Seq. #1150 JAL HED 846	HED 836		✓		No direct means to verify Isolations are reset. Only actual valve positions.
A	Seq. #1720 JAL HED 847		✓			Presently the switches are labeled wrong. Should be labeled "SRV Low-Low Set Reset A+B"

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 07/25/84

HED NO.: 843

REVIEWER: HOWELL/BISHOP/MCGHEE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: TASK ANALYSIS

CHECKLIST NO.:

PANEL/WORKSTATION NO. P680

(1.) 1CNM-P145A

CONDENSER VACUUM METER

(2.) 1CNM-P145B

COMPONENT DESCRIPTION NOT FOUND

DESCRIPTION OF DISCREPANCY:

(SCENARIO A, SEQUENCE 670) THE TASK/SUBTASK SAYS INFORM CREW CONDENSER VACUUM IS AT 24 INCHES OF HG. HOWEVER, METER'S 1CNM-P145(A & B) ARE LABELED "INCHES HG. ABS".

RECOMMENDATIONS:

CHANGE TO INCHES HG.

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR# C52,620
FDDR# LD1-2401 RO

ISSUE DATE / /
ISSUE DATE 10/24/84

CRITICALITY RATING: 3

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 08/10/84

HED NO.: 844

REVIEWER: BISHOP/HOWELL/MCGHEE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: TASK ANALYSIS

CHECKLIST NO.:

PANEL/WORKSTATION NO. DRMS
(1.) DRMS

DIGITAL RADIATION MONITORING SYSTEM

DESCRIPTION OF DISCREPANCY:

(SCENARIO A/SEQUENCE 680) THE TASK/SUBTASK SAYS OBSERVE LEAKAGE CONTROL (DRYWELL AND CONTAINMENT RADIATION LEVEL). HOWEVER, THE PRESENT INFORMATION IN CR DOES NOT PROVIDE SUFFICIENT INFORMATION FOR THIS TASK.

RECOMMENDATIONS:

THIS HED IS BASED ON THE DRMS SYSTEM IN THE SIMULATOR WHICH WAS DEVELOPED PRIOR TO THE PURCHASE OF THE PLANT SYSTEM. THE PLANT DRMS WILL MONITOR THE PARAMETERS AS STATED IN THE FSAR WHICH INCLUDES DW & CONTAINMENT RAD LEVELS. NO FURTHER ACTION

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 3

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 230

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B2.11

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P808-83

PANEL/WORKSTATION NO. P808-84

DESCRIPTION OF DISCREPANCY:

DRYWELL TEMP METERS AND RECORDER RANGES TO ONLY 200 AND NEEDS TO GO TO AT LEAST 330 (SCENARIO A/SEQUENCE 690)

RECOMMENDATIONS:

EVALUATE OPERATIONAL LIMITS OF DRYWELL TEMP RECORDERS.

<<<C60,586 WAS GENERATED TO CORRECT THIS HED BUT WAS CANCELLED SINCE P40,941 HAD ALREADY BEEN ISSUED TO ADDRESS THIS PROBLEM>>>

<<<IN ADDITION TO E&DCR P40,941, SEE C68,866 >>>

ACTION:

EVALUATION HAS DETERMINED THAT PRESENT RANGE OF RECORDERS IS INADEQUATE. RECORDER WILL BE RECALIBRATED FOR A RANGE OF 40 DEGREES TO 440 DEGREES FAH. TO AGREE WITH REG. GUIDE 1.97 POSITION IN FSAR

E&DCR# P40,941
FDDR# LD1-2387 RO

ISSUE DATE / /
ISSUE DATE 01/18/85

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 07/25/84

HED NO.: 836

REVIEWER: HOWELL/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: TASK ANALYSIS

CHECKLIST NO.:

PANEL/WORKSTATION NO. P601

- (1.) INBD.ISO.RST INBOARD ISOLATION RESET
- (2.) OUTBD.ISO.RST OUTBOARD ISOLATION RESET

DESCRIPTION OF DISCREPANCY:

(SCENARIO A/SEQUENCE 1150 & SCENERIO D/SEQUENCE 560) THE TASK/SUBTASK SAYS "POSITION TO RESET INBOARD AND OUTBOARD ISOLATION SEAL IN RESETS". HOWEVER, THERE IS NO DIRECT INDICATION OF RESET EXCEPT FOR VALVES REPOSITIONING.

RECOMMENDATIONS:

WHEN ISOLATION SIGNAL CLEARS, THE OPERATOR MUST TAKE DELIBERATE ACTION TO RESET THE ISOLATION VALVES. NO ISOLATION VALVE MOVEMENT WILL OCCUR FROM THIS ACTION. A SECOND ACTION IS REQUIRED TO OPEN A PARTICULAR ISOLATION VALVE AFTER RESET.

THE RESET IS VERIFIED WHEN THE OPERATOR MANUALLY REPOSITIONS AN ISOLATION VALVE. ADDITIONAL INDICATION IS NOT REQUIRED.

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR# C51,074
FDDR# LD1-1134 R1

ISSUE DATE 02/29/84
ISSUE DATE 11/21/83

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 08/10/84

HED NO.: 847

REVIEWER: BISHOP/HOWELL/MCGHEE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: TASK ANALYSIS

CHECKLIST NO.:

PANEL/WORKSTATION NO. P601

(1.) LO-LO RESET

ADS PRESS. RLF INHIBIT LOGIC(AB)RST

DESCRIPTION OF DISCREPANCY:

(SCENARIO A/SEQUENCE 1720) THE TASK/SUBTASK SAYS POSITION TO RESET ADS PRESSURE (LOW-LOW) RELIEF INHIBIT LOGIC A&B RESET. HOWEVER, THE SWITCHES ARE PRESENTLY LABELED INCORRECTLY. THEY SHOULD BE LABELED "SRV LOW-LOW SET/RESET" FOR A & B TRAIN.

RECOMMENDATIONS:

EVALUATE FUNCTION OF SWITCHES AND CHANGE LABELS IF APPROPRIATE.

<<< THESE HAVE BEEN RE-LABELED AS FOLLOWS: SAFETY RELIEF VALVE LOW LOW SET LOGIC A RESET >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

APPENDIX F

SAFETY EVALUATION REPORT
HUMAN ENGINEERING DISCREPANCIES
FROM T.E.R. APPENDIX A

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 417

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-4

PANEL/WORKSTATION NO. P680-5

PANEL/WORKSTATION NO. P680-6

DESCRIPTION OF DISCREPANCY:

THE ORDERING OF COMPONENTS OF SIMILAR FUNCTION IS NOT CONSISTENTLY FROM LEFT-TO-RIGHT OR FROM TOP-TO-BOTTOM (KEY LOCK SWITCHES SHOULD BE GROUPED WITH SCRAM DISCHARGE VOLUME AND SCRAM RESET BUTTONS TOGETHER).

RECOMMENDATIONS:

NO ACTION. THE LOCATIONS AND SEQUENCE TO OPERATE THESE SWITCHES IS THOROUGHLY ADDRESSED IN TRAINING.

<<< THE DISCREPANCY IS THAT OPERATORS CONFUSE THE CRD SCRAM DISCHARGE HI WATER LVL BYPASS KEYLOCK SWITCHES WITH THE SCRAM RESET KEYLOCK SWITCHES. TO RESOLVE THIS, THE SCRAM RESET SWITCHES WILL BE CHANGED TO A DIFFERENT TYPE OF SWITCH. MATERIAL

CONSTRAINTS FOR THESE SWITCHES WILL PREVENT INSTALLATION FROM OCCURRING PRIOR TO FUEL LOAD. MISOPERATION OF ANY OF THESE KEYLOCK SWITCHES WOULD NOT ADVERSELY AFFECT THE CONDITION OF THE PLANT IN MODE 4, 5. CHANGE IS NOT REQUIRED PRIOR TO FUEL LOAD >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR# C53,566
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 437

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B5.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680-4

PANEL/WORKSTATION NO. P680-5

PANEL/WORKSTATION NO. P680-6

DESCRIPTION OF DISCREPANCY:

HANDLES FOR SWITCHES DO NOT MOVE CONSISTENTLY IN THE SAME DIRECTION IN ACCORDANCE WITH EXPECTATIONS. (RPS TRIP OUT-OF-SERVICE SWITCHES-NORM, IN-OP POSITION SWAPPED.)

RECOMMENDATIONS:

OUT OF SERVICE INDICATION MANUAL SWITCHES ONLY, TRAINING INFORMS OPERATORS OF FUNCTION. NO ACTION.

<<<THESE CONTROLS WERE REVIEWED ON 3/27/85 . THEY ARE NOW CONFIGURED LEFT/RIGHT NORMAL/INOP WHICH IS CONSISTENT WITH ALL OTHER INOPERABILITY CONTROLS IN THE MAIN CONTROL ROOM . NO FURTHER ACTION REQUIRED>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 196

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: CONTROL ROOM SURVEY - NUREG 0700

CHECKLIST NO.:

GUIDELINE AREA: CONTROL ROOM WORKSPACE

PROBLEM CATEGORY: ENVIRONMENT

PROBLEM SUB-CATEGORY: EMERGENCY LIGHTING

PANEL/WORKSTATION NO. GENERIC

(1.)

DESCRIPTION OF DISCREPANCY:

DC BATTERY PACK EMERGENCY LIGHTING IS INADEQUATE BEING A MAX. OF 6 FOOTCANDLES AT ITS BRIGHTEST SPOT AND NEAR 0 FOOTCANDLES AT MANY SPOTS. LIGHTING CAUSES SHADOWS AND DARK AREAS ON THE BOARD

RECOMMENDATIONS:

EVALUATE LIGHTING TO MEET HUMAN FACTORS MAINTENANCE PLAN STANDARDS
<<< SWEC HAS COMPLETED ITS' EVALUATION OF THE OVERALL LIGHTING DESIGN FOR THE CONTROL ROOM. IT WAS DETERMINED THAT, DUE TO THE REDUNDANT POWER SUPPLIES OF THE EMERGENCY LIGHTING FIXTURES, AT LEAST 20% OF THE LIGHTING FIXTURES WILL BE AVAILABLE.

THE BATTERY PACK LIGHTING PROVIDES ADEQUATE LIGHTING FOR EGRESS FROM THE CONTROL ROOM . NO FURTHER DESIGN MODIFICATION IS REQUIRED >>>

ACTION:

STONE & WEBSTER IS EVALUATING CONTROL ROOM LIGHTING AS A RESULT OF DCRDR. FINAL LIGHT READINGS WILL BE TAKEN AFTER DESIGN CHANGES (IF ANY) ARE IMPLEMENTED AND FLOORING IS INSTALLED.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 194

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: CONTROL ROOM SURVEY - NUREG 0700

CHECKLIST NO.:

GUIDELINE AREA: CONTROL ROOM WORKSPACE

PROBLEM CATEGORY: ENVIRONMENT

PROBLEM SUB-CATEGORY: ILLUMINATION

PANEL/WORKSTATION NO. P680-01

(1.)

PANEL/WORKSTATION NO. P680-02

(1.)

PANEL/WORKSTATION NO. P680-03

(1.)

PANEL/WORKSTATION NO. P680-04

(1.)

PANEL/WORKSTATION NO. P680-06

(1.)

PANEL/WORKSTATION NO. P680-05

(1.)

PANEL/WORKSTATION NO. P680-07

(1.)

PANEL/WORKSTATION NO. P680-08

(1.)

PANEL/WORKSTATION NO. P680-09

(1.)

DESCRIPTION OF DISCREPANCY:

THE LISTED PANEL <<<INSERTS>>> HAVE BELOW THE RECOMMENDED 50 FOOTCANDLES FOR SEATED OPERATOR STATION

RECOMMENDATIONS:

EVALUATE LIGHTING OVER THIS PANEL.

<<< A LIGHTING SURVEY WAS CONDUCTED BY R. LIDDLE AND D. CHASE ON 5/2/85. THE IMPROVED LIGHTING DESIGN INCREASED THE LIGHTING LEVELS SUCH THAT ALL READINGS WERE IN COMPLIANCE WITH NUREG 0700 GUIDANCE. NO FURTHER ACTION REQUIRED >>>

ACTION:

STONE & WEBSTER IS EVALUATING CONTROL ROOM LIGHTING AS A RESULT OF DCRDR. FINAL LIGHT READINGS WILL BE TAKEN AFTER DESIGN CHANGES (IF ANY) ARE IMPLEMENTED AND FLOORING IS INSTALLED

E&DCR# P-22305
FDDR#

ISSUE DATE 01/11/85
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 198

REVIEWER: BARKS/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: CONTROL ROOM SURVEY - NUREG 0700

CHECKLIST NO.:

GUIDELINE AREA: CONTROL ROOM WORKSPACE

PROBLEM CATEGORY: ENVIRONMENT

PROBLEM SUB-CATEGORY: ILLUMINATION

PANEL/WORKSTATION NO. P870-54

PANEL/WORKSTATION NO. P870-55

PANEL/WORKSTATION NO. P870-56

PANEL/WORKSTATION NO. P877-31

PANEL/WORKSTATION NO. P877-32

DESCRIPTION OF DISCREPANCY:

SHADOWING OCCURS WHERE LIGHT LEVELS ARE LOW ON THE LISTED PANEL INSERTS

RECOMMENDATIONS:

EVALUATE LIGHTING LUMINANCE DISTRIBUTION ACROSS CONTROL BOARDS

<<<A LIGHTING SURVEY WAS CONDUCTED BY R. LIDDLE AND D. CHASE ON 5/2/85. THE IMPROVED LIGHTING DESIGN INCREASED THE LIGHTING LEVELS SUCH THAT THE SHADOWING WAS ELIMINATED AND THAT READINGS WERE IN COMPLIANCE WITH NUREG 0700 GUIDANCE. NO FURTHER ACTION REQUIRED >>>

ACTION:

SAME AS HED #193

E&DCR# P-22305
FDDR#

ISSUE DATE 01/11/85
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 197

REVIEWER: BARKS/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: CONTROL ROOM SURVEY - NUREG 0700

CHECKLIST NO.:

GUIDELINE AREA: CONTROL ROOM WORKSPACE

PROBLEM CATEGORY: ENVIRONMENT

PROBLEM SUB-CATEGORY: ILLUMINATION

PANEL/WORKSTATION NO. P870-54

(1.)

PANEL/WORKSTATION NO. P870-55

(1.)

PANEL/WORKSTATION NO. P870-56

(1.)

PANEL/WORKSTATION NO. P877-31

(1.)

PANEL/WORKSTATION NO. P877-32

(1.)

DESCRIPTION OF DISCREPANCY:

AT THE ENDS OF THE TWO BENCH BOARD LISTED THE TASK AREA LUMINANCE RATIOS ARE LOWER THAN MINIMUM LEVELS ALLOWED SINCE THERE ARE NO LIGHTING FIXTURES EXTENDING OVER THESE PORTIONS OF THE CONTROL BOARDS

RECOMMENDATIONS:

INVESTIGATE DESIGN STANDARD FOR PGCC CONTROL ROOM LIGHTING AND CORRECT TO MEET HUMAN FACTORS MAINTENANCE PLAN STANDARDS

<<< A LIGHTING SURVEY WAS CONDUCTED BY R. LIDDLE AND D. CHASE ON 5/2/85. THE IMPROVED LIGHTING DESIGN INCREASED THE LIGHTING LEVELS SUCH THAT ALL READINGS WERE IN COMPLIANCE WITH NUREG 0700 GUIDANCE. NO FURTHER ACTION REQUIRED >>>

ACTION:

STONE & WEBSTER IS EVALUATING CONTROL ROOM LIGHTING AS A RESULT OF DCRDR.FINAL LIGHT READINGS WILL BE TAKEN AFTER DESIGN CHANGES (IF ANY) ARE IMPLEMENTED AND FLOORING IS INSTALLED.

E&DCR# P-22305
FDDR#

ISSUE DATE 01/11/85
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

**HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT**

DATE: 02/28/84

HED NO.: 193

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: CONTROL ROOM SURVEY - NUREG 0700

CHECKLIST NO.:

GUIDELINE AREA: CONTROL ROOM WORKSPACE

PROBLEM CATEGORY: ENVIRONMENT

PROBLEM SUB-CATEGORY: ILLUMINATION

PANEL/WORKSTATION NO. P870-56
(1.)

PANEL/WORKSTATION NO. P870-55
(1.)

PANEL/WORKSTATION NO. P877-31
(1.)

PANEL/WORKSTATION NO. P877-32
(1.)

PANEL/WORKSTATION NO. P601-16
(1.)

PANEL/WORKSTATION NO. P601-21
(1.)

PANEL/WORKSTATION NO. P601-20
(1.)

PANEL/WORKSTATION NO. P601-17
(1.)

PANEL/WORKSTATION NO. P601-18
(1.)

PANEL/WORKSTATION NO. P601-19
(1.)

PANEL/WORKSTATION NO. P601-22
(1.)

DESCRIPTION OF DISCREPANCY:

THE LISTED PANELS INSERTS ARE ILLUMINATED BELOW THE 20 FOOTCANDLES MINIMUM

RECOMMENDATIONS:

LIGHTING SHOULD BE EVALUATED OVER ABOVE PANELS. REASSESS LIGHTING MEASUREMENTS AFTER INSTALLATION.

<<< A LIGHTING SURVEY WAS CONDUCTED BY R. LIDDLE AND D. CHASE ON 5/2/85. THE IMPROVED LIGHTING DESIGN INCREASED THE LIGHTING LEVELS SUCH THAT ALL READINGS WERE IN COMPLIANCE WITH NUREG 0700 GUIDANCE. NO FURTHER ACTION REQUIRED.>>>

ACTION:

STONE & WEBSTER IS EVALUATING CONTROL ROOM LIGHTING AS A RESULT OF DCDR. FINAL LIGHT READINGS WILL BE TAKEN AFTER DESIGN CHANGES (IF ANY) ARE IMPLEMENTED AND FLOORING IS INSTALLED.

E&DCR# P-22305
FDDR#

ISSUE DATE 01/11/85
ISSUE DATE / /

CRITICALITY RATING 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 432

REVIEWER: BURGY/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B2.17

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:

INDICATING DEVICES ARE NOT DESIGNED SO THAT A FAILURE MODE IS EVIDENT. (NOT KNOWN)

RECOMMENDATIONS:

ESTABLISH CONVENTIONS BY INVESTIGATING FAILURE MODES IN CONTROL ROOM
<< SWEC HAS COMPLETED THE EVALUATION. THE RESULTS ARE DOCUMENTED ON
R/S-9782, DATED 10/23/84 , AND ARE INCLUDED IN SECTION 3 OF THE MAINTENANCE
PLAN . THE MAINTENANCE PLAN HAS BEEN SUBMITTED TO TRAINING FOR USE AS A
REFERENCE IN THEIR TRAINING
PROGRAM >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO. : 16

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B2.2

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. C61-P001

(1.)

DESCRIPTION OF DISCREPANCY:

NO PERMANENT LIGHTING IN REMOTE SHUTDOWN ROOM

RECOMMENDATIONS:

INSTALL LIGHTING AND TAKE LIGHT READINGS <<<THE RESULTS OF THIS LIGHTING SURVEY WILL BE INCLUDED IN THE ADDENDUM TO THE DCRDR SUMMARY REPORT >>>
<<< A LIGHTING SURVEY WAS CONDUCTED BY R. LIDDLE AND D. CHASE ON 5/2/85 FOR THE REMOTE SHUTDOWN PANELS. ALL LIGHT READINGS WERE IN COMPLIANCE WITH NUREG 0700 GUIDANCE. NO FURTHER ACTION REQUIRED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 32

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B4.7

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:
FOR VALVE INDICATIONS (LIGHTS) IT IS UNKNOWN IF DIRECT OR IMPLIED INDICATION
USED *E., SRV SONIC INDICATIONS

RECOMMENDATIONS:

INVESTIGATE DIRECT/INDIRECT STATUS INDICATIONS IN VERIFICATION PHASE. THIS
INFORMATION WILL BE INPUT INTO TRAINING/PROCEDURES AS APPROPRIATE.
<<<IT WAS DETERMINED THAT THE SRVs HAVE INDIRECT INDICATION BUT THAT OTHER
VALVE INDICATOR LIGHTS REFLECT DIRECT INDICATION OF VALVE POSITION. THIS
INFORMATION WAS ALREADY INCLUDED IN RBS TRAINING . A DESIGN CHANGE WILL BE
IMPLEMENTED PRIOR TO FUEL
LOAD TO COMPLIMENT THE PRESENT SRV INDICATION BY GIVING DIRECT INDICATION OF
VALVE STATUS >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/22/84

HED NO.: 285

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B4.7

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P601-18

PANEL/WORKSTATION NO. P601-19

PANEL/WORKSTATION NO. P601-22

DESCRIPTION OF DISCREPANCY:

SRV POSITION INDICATION IS ACTUALLY SOLENOID POWER INDICATION

RECOMMENDATIONS:

DESIGN CHANGE IN PROGRESS TO GIVE DIRECT INDICATION IN CONTROL ROOM. NO
FURTHER ACTION REQUIRED. <<<THIS SONIC MONITORING SYSTEM WILL COMPLIMENT THE
PRESENT SOLENOID POSITION INDICATIONS AND WILL BE IMPLEMENTED PRIOR TO FUEL
LOAD >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 541

REVIEWER: BURGY/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: SB1.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680-08

(1.)

PANEL/WORKSTATION NO. P680-07

(1.)

PANEL/WORKSTATION NO. P680-10

(1.)

DESCRIPTION OF DISCREPANCY:

INDICATOR SCALES ARE NOT EASILY READ WHEN STATIONED AT THE PANEL (INSERT 7D METERS TOO SMALL). UPGRADED DUE TO SYSTEM RELIABILITY INCREASE.

RECOMMENDATIONS:

CHANGE TO LARGER METERS.

<<< IN ADDITION TO TRAINING ADDRESSED BELOW, BACKUP LIGHT INDICATION IS AVAILABLE (FULL OPEN, OPEN, CLOSED). ALSO PMS COMPUTER MONITORS VALVE POSITION. THIS IS NOT A SAFETY-RELATED SYSTEM. NO FURTHER ACTION REQUIRED.

ACTION:

NO ACTION. THESE METERS ARE FOR TURBINE BYPASS. OPERATORS ARE TRAINED USING THESE METERS ON PLANT-SPECIFIC SIMULATOR.<<< IN ADDITION TO TRAINING, BACKUP LIGHT INDICATION IS AVAILABLE (FULL OPEN, OPEN, CLOSED). ALSO, PMS COMPUTER MONITORS VLV POSITION.>>

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/22/84

HED NO.: 292

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: SB1.3

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P601-18

PANEL/WORKSTATION NO. P601-19

PANEL/WORKSTATION NO. P601-22

DESCRIPTION OF DISCREPANCY:

SRV OPEN IS ONLY A DEMAND SIGNAL BUT IS NOT LABELED AS SUCH

RECOMMENDATIONS:

DESIGN CHANGE IN PROGRESS TO GIVE DIRECT SRV INDICATION. NO FURTHER ACTION
REQUIRED. <<< THIS SYSTEM WILL COMPLIMENT THE PRESENT DEMAND SIGNAL
INDICATION AND WILL BE IMPLEMENTED PRIOR TO FUEL LOAD >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 08/10/84

HED NO.: 847

REVIEWER: BISHOP/HOWELL/MCGHEE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: TASK ANALYSIS

CHECKLIST NO.:

PANEL/WORKSTATION NO. P601

(1.) LO-LO RESET

ADS PRESS. RLF INHIBIT LOGIC(AB)RST

DESCRIPTION OF DISCREPANCY:

(SCENARIO A/SEQUENCE 1720) THE TASK/SUBTASK SAYS POSITION TO RESET ADS PRESSURE (LOW-LOW) RELIEF INHIBIT LOGIC A&B RESET. HOWEVER, THE SWITCHES ARE PRESENTLY LABELED INCORRECTLY. THEY SHOULD BE LABELED "SRV LOW-LOW SET/RESET" FOR A & B TRAIN.

RECOMMENDATIONS:

EVALUATE FUNCTION OF SWITCHES AND CHANGE LABELS IF APPROPRIATE.

<<< THESE HAVE BEEN RE-LABELED AS FOLLOWS: SAFETY RELIEF VALVE LOW LOW SET LOGIC A RESET >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 07/25/84

HED NO.: 833

REVIEWER: HOWELL/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: TASK ANALYSIS

CHECKLIST NO.:

PANEL/WORKSTATION NO. P808
(1.)

DESCRIPTION OF DISCREPANCY:

(SCENARIO D/SEQUENCE 480) THE TASK/SUBTASK STATES "OBSERVE
CONTAINMENT/DRYWELL PRESSURE" AND THERE IS NO INSTRUMENT LABELED "CONTAINMENT
PRESSURE" IN THE CONTROL ROOM

RECOMMENDATIONS:

ADD LABELS TO RECORDERS 1CMS-PR2A & 2B TO INDICATE CONTAINMENT PRESSURE.
<<<PERMANENT LABELS HAVE BEEN ORDERED. TEMPORARY LABELS WILL BE ADDED PRIOR
TO FUEL LOAD. PERMANENT LABELS WILL BE INSTALLED PRIOR TO EXCEEDING 5% POWER
>>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 5

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. C61-P001
(1.)

DESCRIPTION OF DISCREPANCY:

NO MIMIC OR DEMARCATION USED TO DISTINGUISH SYSTEMS OR COMPONENTS

RECOMMENDATIONS:

USE COLOR CODING, LINES OF DEMARCATION, MIMICS, AND HIERARCHICAL LABELING TO SIMPLIFY OPERATION OF PANEL.

<<< THIS IS THE REMOTE SHUTDOWN PANEL WHICH IS OUTSIDE THE MAIN CONTROL ROOM. THE REMOTE SHUTDOWN PANEL IS NOT A TECH. SPEC. ITEM REQUIRED FOR LOADING FUEL. THE OPERATORS WILL NOT BE SUBJECTED TO CHANGES IN ENHANCEMENTS DURING THE PERIOD OF INITIAL REACTOR STARTUP OPERATIONS BECAUSE THIS PANEL IS NOT IN USE >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 316

REVIEWER: SCHROEDER/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.10

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-76

(1.)	1HVF*AOD37A	COMPONENT DESCRIPTION NOT FOUND
(2.)	1HVF*AOD37B	COMPONENT DESCRIPTION NOT FOUND

DESCRIPTION OF DISCREPANCY:

THESE TWO AIR INLET DAMPERS HAVE NOT BEEN MIMICED TO SUPPLY AIR IN.

RECOMMENDATIONS:

ADD MIMIC TO SHOW SUPPLY AIR INTO DAMPERS.

<<< MIMIC HAS BEEN ADDED SINCE THE SURVEY TO PROPERLY DISPLAY AIR INLET
THROUGH DAMPERS 1HVF*AOD37 A&B >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 7

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. C61-P001
(1.)

DESCRIPTION OF DISCREPANCY:
SUBGROUPS OF COMPONENTS ARE NOT GROUPED

RECOMMENDATIONS:

USE COLOR CODING AND HIERARCHICAL LABELING IF APPROPRIATE TO SUPPLEMENT
DEMARCATON

<<<THIS IS THE REMOTE SHUTDOWN PANEL WHICH IS OUTSIDE THE CONTROL ROOM. THE
REMOTE SHUTDOWN PANEL IS NOT A TECH. SPEC. ITEM REQUIRED FOR LOADING FUEL.
THE OPERATORS WILL NOT BE SUBJECTED TO CHANGES IN ENHANCEMENTS DURING THE
PERIOD OF INITIAL REACTOR
STARTUP OPERATIONS BECAUSE THIS PANEL IS NOT IN USE.>>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO. : 8

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.7

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. C61-P001
(1.)

DESCRIPTION OF DISCREPANCY:

THE VALVES FOR THE RHR SYSTEM ARE NOT ARRANGED TO BE EASILY RECOGNIZABLE

RECOMMENDATIONS:

PROVIDE MIMIC FLOW DIAGRAM

<<< THIS IS THE REMOTE SHUTDOWN PANEL WHICH IS OUTSIDE THE CONTROL ROOM. REMOTE SHUTDOWN PANEL IS NOT A TECH. SPEC. ITEM REQUIRED TO LOAD FUEL. THE OPERATORS WILL NOT BE SUBJECTED TO CHANGES IN ENHANCEMENTS DURING THE PERIOD OF INITIAL REACTOR STARTUP OPERATIONS BECAUSE THIS PANEL IS NOT IN USE >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 466

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.7

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-1

DESCRIPTION OF DISCREPANCY:

LINES OF DEMARCATION, MIMICS, OR OTHER GRAPHICS ARE NOT LAID OUT SO THAT FLOW PATHS AND ARRANGEMENTS ARE ORDERLY AND EASILY RECOGNIZED. (ADD ISOLATION VALVE INDICATORS TO MIMIC) (REDO MIMIC)

RECOMMENDATIONS:

REWORK MIMIC

<<<MIMIC IS BEING CHANGED TO REFLECT PROPER SYSTEM CONFIGURATION>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 25

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. 1RSS-PNL102

(1.)

DESCRIPTION OF DISCREPANCY:

THERE ARE NO LINES OF DEMARCATION FOR RHR LOOPS B & C FOR SYSTEM ENHANCEMENT

RECOMMENDATIONS:

ADD LINES OF DEMARCATION BETWEEN SYSTEM TRAINS B & C.

<<<THIS IS THE REMOTE SHUTDOWN PANEL WHICH IS OUTSIDE OF THE CONTROL ROOM. REMOTE SHUTDOWN PANEL IS NOT A TECH. SPEC. ITEM FOR LOADING FUEL. THE OPERATORS WILL NOT BE SUBJECTED TO CHANGES IN ENHANCEMENTS DURING THE PERIOD OF INITIAL R_x STARTUP OPERATIONS BECAUSE THIS PANEL IS NOT IN USE >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 77

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71

(1.)

PANEL/WORKSTATION NO. P863-72

(1.)

PANEL/WORKSTATION NO. P863-73

(1.)

PANEL/WORKSTATION NO. P680-2

(1.)

PANEL/WORKSTATION NO. P680-3

(1.)

DESCRIPTION OF DISCREPANCY:

CONTROLS AND DISPLAYS ARE NOT GROUPED ACCORDING TO SYSTEM

RECOMMENDATIONS:

ADD LINES OF DEMARCATION AND COLOR CODING AS APPROPRIATE <<< THE SWITCHES ON P863 THAT ARE NOT GROUPED ACCORDING TO SYSTEM ARE GROUPED ACCORDING TO FLOWPATH. THE DISPLAYS ARE GROUPED APPROPRIATELY, BEING IN THE MIDST OF THE CONTAINMENT VENTILATION SYSTEM. THE CONTROLS ON P680 ARE GROUPED PROPERLY SINCE THE DISPLAYS HAVE NOW BEEN CHANGED(SEE HED 412). NO FURTHER ENHANCEMENT OR DESIGN MODIFICATION IS REQUIRED >>>

ACTION:

APPROVED BY GSU MANAGEMENT. <<<NO FURTHER ACTION REQUIRED >>>

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO. : 421

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A4.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-4

PANEL/WORKSTATION NO. P680-5

PANEL/WORKSTATION NO. P680-6

DESCRIPTION OF DISCREPANCY:

SELECTED USE OF COLORS IS NOT CONSISTENTLY APPLIED FOR ALARM PRIORITIZATION
(NO DIFFERENTIATION ON ANNUNCIATOR 4C).

RECOMMENDATIONS:

DEVELOP ANNUNCIATOR COLOR SCHEME AND IMPLEMENT THROUGHOUT CR

<<< THE COLOR CODING OF ANNUNCIATORS WILL BE COMPLETED ON A GENERIC BASIS
THROUGHOUT THE CONTROL ROOM PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 09/19/84

HED NO.: 830

REVIEWER: LINK

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OPERATING PERSONNEL INTERVIEW

CHECKLIST NO.: A5

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680

DESCRIPTION OF DISCREPANCY:

LABEL FOR MANUAL "INITIATION" OF CONTAINMENT SHOULD READ "ISOLATION" ON P680.

RECOMMENDATIONS:

CHANGE LABELS ON INSERT 7D TO READ ISOLATION INSTEAD OF INITIATION.

<<<LABELING IS BEING CHANGED TO REFLECT CORRECT FUNCTION>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE . / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 09/28/84

HED NO. : 804

REVIEWER: LINK

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OPERATING PERSONNEL INTERVIEW

CHECKLIST NO.: A5

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863
(1.)

DESCRIPTION OF DISCREPANCY:

LABEL FOR 1 HVR*ADD 263 AND 264 MISWORDED (SHOULD BE :TEST TO SGT") ON P863.

RECOMMENDATIONS:

CHANGE LABEL TO INDICATE CORRECT FUNCTION.

<<<TECH. SPEC. 3.6.5.4 ONLY REQUIRES THIS SYSTEM(STANDBY GAS TREATMENT) IN
CONDITIONS 1, 2; 3. THIS SYSTEM IS NOT REQUIRED TO LOAD FUEL.>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 747

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-7D

DESCRIPTION OF DISCREPANCY:

MISSING ESCUTCHEONS FOR MN STM ISLN MANUAL INITIATION - B21H-S25 A&D.
(MISSING BECAUSE STANDARD SIZE ESC. [ON B&C] WON'T FIT FOR A&D.)

RECOMMENDATIONS:

ADD ESCUTCHEONS TO MN STM ISLN MANUAL INITIATION PUSHBUTTONS
<<<LABELS TO BE ADDED PRIOR TO FUEL LOAD >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 92/24/84

HED NO.: 225

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-81B

(1.)

DESCRIPTION OF DISCREPANCY:

TWO BAILEY CONTROLLERS HAVE LABELS THAT SAY ONLY 'DIVISION 1' & 'DIVISION 2':
SEVERAL UNLABELED COMPONENTS

RECOMMENDATIONS:

ADD LABELS TO INDICATE NAME, FUNCTION AND DIVISION TO COMPONENTS

<<< LABELS HAVE BEEN ADDED SINCE SURVEY AS A RESULT OF STARTUP & TEST WORK >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO. : 236

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-83B

PANEL/WORKSTATION NO. P808-84B

DESCRIPTION OF DISCREPANCY:

LABELS SHOULD DIFFERENTIATE BETWEEN THE DIFFERENT PENS

RECOMMENDATIONS:

CHANGE LABELS TO DIFFERENTIATE BETWEEN PENS USING <<<COLOR CODING>>> AND
FUNCTION/PARAMETER NAME

<<<PERMANENT LABELS HAVE BEEN ORDERED. TEMPORARY LABELS WILL BE INSTALLED
PRIOR TO FUEL LOAD. PERMANENT LABELS WILL BE INSTALLED PRIOR TO EXCEEDING 5%
POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 80

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71

(1.) 1HVR-AOD241

DECAY HEAT REMOVAL INLET

(2.) 1GTS FLT1B

DECAY HEAT REMOVAL OUTLET

DESCRIPTION OF DISCREPANCY:

DECAY HEAT REMOVAL OUTLET IS LABELED INLET/AGTS-FLT1B IS NOT LABELED

RECOMMENDATIONS:

RELABEL TO SAY OUTLET. AGTS-FLT1B LABEL HAS BEEN ADDED SINCE CR SURVEY.
<<<PERMANENT LABEL HAS BEEN ORDERED. TEMPORARY LABEL WILL BE ADDED PRIOR TO
FUEL LOAD. PERMANENT LABEL WILL BE INSTALLED PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/21/84

HED NO.: 269

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P870-55C

PANEL/WORKSTATION NO. P870-56C

DESCRIPTION OF DISCREPANCY:

THREE POSITION SWITCHES HAVE NO AUTO FUNCTION NOTED ON LABEL OR ESCUTCHEON

RECOMMENDATIONS:

PERFORM ENGINEERING EVALUATION TO DETERMINE IF 3RD POSITION HAS A FUNCTION OR IS IN NEUTRAL POSITION AND RELABEL IF REQUIRED.

<<<THESE VALVES ARE PART OF THE MAIN STEAM SYSTEM WHICH WILL NOT BE IN USE FOR SOME TIME AFTER FUEL LOAD. THIS IS NOT REQUIRED FOR FUEL LOAD >>>

ACTION:

ALL 3 POSITION SWITCHES ON P-870(WITH ONLY 2 POSITIONS LABELED)WERE EVALUATED.IT WAS DETERMINED THAT 1DSR-MOV109 AND 1DSR-MOV107 HAVE AUTO FUNCTIONS AND THESE LABELS WILL BE CHANGED.ALL OTHERS ARE 'SPRING RETURN TO NEUTRAL',REQUIRING NO LABEL CHANGE.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 29

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.10

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. 1RSS-PNL102

- (1.) 1E12*MOVFO53B SHUTDOWN COOLING INJECTION VALVE
- (2.) 1E12*MOVFO37B SHUTDOWN COOLING UPPER POOL VALVE

DESCRIPTION OF DISCREPANCY:

THESE VALVES ARE NOT ACCURATELY LABELED. SHOULD BE: SHUTDOWN COOLING VALVE.

RECOMMENDATIONS:

RELABEL TO BE CONSISTENT WITH CONTROL ROOM.

<<< THIS IS THE REMOTE SHUTDOWN PANEL WHICH IS OUTSIDE OF THE CONTROL ROOM. REMOTE SHUTDOWN PANEL IS NOT A TECH. SPEC. ITEM REQUIRED FOR FUEL LOADING. THE OPERATORS WILL NOT BE SUBJECTED TO CHANGES IN ENHANCEMENTS DURING THE PERIOD OF INITIAL REACTOR STARTUP OPERATIONS BECAUSE THIS PANEL WILL NOT BE IN USE >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/22/84

HED NO.: 284

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.10

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P601-19

DESCRIPTION OF DISCREPANCY:

MAIN STEAM LINE C SAFETY RELIEF VALVE SWITCH S26A IS ACTUALLY AN ADS SAFETY RELIEF VALVE

RECOMMENDATIONS:

RELABEL TO READ ADS SAFETY RELIEF VALVE

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 427

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.10

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-4

DESCRIPTION OF DISCREPANCY:

LABELS ARE NOT SUCCINCTLY WORDED AND ACCURATE WITH RESPECT TO FUNCTION OR INPUT SIGNAL. (RECIRC. FCV A/B MOTION INHIBIT RESET, USE RST TO ABBREVIATE RESET.)

RECOMMENDATIONS:

CHANGE LABEL

<<<LABEL IS BEING CORRECTED TO REFLECT CORRECT FUNCTION >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 116

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.10

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-75C

- | | | |
|-------|------------|-----------------------------|
| (1.) | 1HVC*FN3B | BATTERY ROOM 18 EXH OFF |
| (2.) | 1HVC*ACU1A | CONTROL ROOM AIR HLDG. UNIT |
| (3.) | 1HVC*ACU1B | CONTROL ROOM AIR HLDG. UNIT |

PANEL/WORKSTATION NO. P863-74B

- | | | |
|-------|-----------|------------------------|
| (1.) | 1HVK*LI1A | CPRSN TANK LEVEL METER |
|-------|-----------|------------------------|

DESCRIPTION OF DISCREPANCY:

THESE LABELS ARE NOT ACCURATE IN RESPECT TO THEIR FUNCTION

RECOMMENDATIONS:

CHANGE LABELS TO INDICATE TRUE FUNCTION

<<<CHANGING THESE LABELS AFTER FUEL LOAD WILL NOT CAUSE OPERATOR CONFUSION
SINCE THIS EQUIPMENT IS IN USE AT THE PRESENT TIME. THE MINOR AMBIGUITIES
THAT EXIST HAVE BEEN WELL NOTED BY THE OPERATORS >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO. : 428

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.11

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-4

PANEL/WORKSTATION NO. P680-5

PANEL/WORKSTATION NO. P680-6

DESCRIPTION OF DISCREPANCY:

COMPUTER TREND RECORDER A&B MISSING LABELS INDICATING WHAT INK COLORS REFER TO.

RECOMMENDATIONS:

ADD LABELS TO INDICATE WHAT THE COLORS REFER TO AND/OR USE COLOR DOTS NEXT TO PEN NAMES

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 81

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71

- (1.) 1HVR-AOD125 COMPONENT DESCRIPTION NOT FOUND
- (2.) 1HVR-AOD126
- (3.) 1HVR-AOD147
- (4.) 1HVR-AOD148

PANEL/WORKSTATION NO. P863-72

- (1.) 1HVR-AOD148

PANEL/WORKSTATION NO. P863-73

- (1.) 1HVR-AOD148

DESCRIPTION OF DISCREPANCY:

THE LISTED VALVES NEED WARNING LABELS DUE TO THE POSSIBILITY OF INADVERTENT OPERATION VIOLATING CONTAINMENT INTEGRITY

RECOMMENDATIONS:

ADD WARNING LABELS.

<<< THE 4 VALVES LISTED ABOVE NOW HAVE AN ALARM/ANNUNCIATOR ASSOCIATED WITH THEM. THE ANNUNCIATOR WILL SOUND IF ANY ONE OF THE 4 VALVES IS OPENED. THIS WILL PREVENT INADVERTENT VIOLATION OF CONTAINMENT/DRYWELL INTEGRITY. NO FURTHER ACTION REQUIRED>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/20/84

HED NO.: 298

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P877-32

PANEL/WORKSTATION NO. P601-16

DESCRIPTION OF DISCREPANCY:
DIVISION 2 AND 3 IS NOT LABELED

RECOMMENDATIONS:

DIVISION 2 LABEL HAS BEEN ADDED SINCE SURVEY. ADD DIV. 3 LABEL.

<<< DIVISION LABELS ARE BEING CHANGED TO BE CONSISTENT WITH THE HEIRARCHICAL
LABELING FORMAT >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO. : 13

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.5

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. C61-P001

(1.)	NUCL BLR	REACTOR VESSEL LEVEL & PRESS INST.
(2.)	E51-F064	RHR CNDS HX STM LINE ISO
(3.)	E12-F024A	RHR TEST LINE
(4.)	RCIC SQ ROOT	RCIC SQ ROOT EXTRACTOR
(5.)	E12-F037A	SHUTDOWN UPPER POOL COOLING
(6.)	HRV-UC12	UNIT COOLER

DESCRIPTION OF DISCREPANCY:

THE NOMENCLATURE AND ABBREVIATIONS ARE INCONSISTENT WITH THE LABELS IN THE MAIN CONTROL ROOM

RECOMMENDATIONS:

RELABEL TO BE CONSISTENT WITH CONTROL ROOM LABEL STANDARDS

<<<THIS IS THE REMOTE SHUTDOWN PANEL WHICH IS OUTSIDE OF THE CONTROL ROOM. THE REMOTE SHUTDOWN PANEL IS NOT A TECH. SPEC. ITEM REQUIRED FOR LOADING FUEL. THE OPERATORS WILL NOT BE SUBJECTED TO CHANGES IN ENHANCEMENTS DURING THE PERIOD OF INITIAL REACTOR STARTUP OPERATIONS BECAUSE THIS PANEL IS NOT IN USE >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 322

REVIEWER: SCHROEDER/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.5

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-76

DESCRIPTION OF DISCREPANCY:

LABELS HAVE BEEN NOTED THAT USE INCONSISTENT ABBREVIATIONS (CONTMT VS CONT
AND FB VS FUEL BLDG).

RECOMMENDATIONS:

CORRECT LABELS TO MEET STANDARD ABBREVIATION LIST

<<<PERMANENT LABELS HAVE BEEN ORDERED. PRESENT LABELING HAS NOT CAUSED
OPERATOR CONFUSION. LABELS WILL BE CHANGED PRIOR TO EXCEEDING 5% POWER>>>

ACTION:

APPROVED BY GSD MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 09/98/4

HED NO.: 812

REVIEWER: LINK

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OPERATING PERSONNEL INTERVIEW

CHECKLIST NO.: B1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P601
(1.)

DESCRIPTION OF DISCREPANCY:

MAIN STEAM VALVE (MSIVs) IS DIFFICULT TO LOCATE OR ACCESS

RECOMMENDATIONS:

COLOR PAD MSIV'S (INBOARD AND OUTBOARD).

<<< THE INBOARD AND OUTBOARD MSIVs ARE BEING COLOR-PADDED AND LABELED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 09/28/4

HED NO.: 820

REVIEWER: LINK

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OPERATING PERSONNEL INTERVIEW

CHECKLIST NO.: B1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P601

DESCRIPTION OF DISCREPANCY:

ONE OPERATOR SUGGESTS THAT THE LPCS CONTROLS ON P601 ARE DIFFICULT TO LOCATE AND DISTINGUISH

RECOMMENDATIONS:

ADD ENHANCEMENTS AS REQUIRED TO PROVIDE VISUAL DISTINCTIVENESS FOR THIS SYSTEM.

<<< TAN COLOR PADS WILL BE USED FOR THIS BENCHBOARD >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 23

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B1.3

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:

(1) THE DEMAND SIGNAL ON THE CONTROLLERS IS NOT LABELED AS A DEMAND SIGNAL.
(2) LABELS ARE NOT POSITIONED CONSISTENTLY ABOVE OR BELOW DEVICE. (3) NEED
VALVE NUMBERS ON LABEL NOT INSTRUMENT NUMBERS. (4) LABELS ARE NOT ACCURATE
WITH RESPECT TO FUNCTION.

RECOMMENDATIONS:

(1) ADD SYMBOL ON LABELS TO CONTROLLERS TO INDICATE DEMAND OR ACTUAL SIGNAL.
(2) POSITION LABELS ABOVE DEVICE (3) PLACE VALVE NUMBERS ON LABELS, (4) REVIEW
CONTROLLER FUNCTION AND CHANGE WORDING TO BE ACCURATE. <<< (5) INDICATE UNITS ON
LABELS AS REQUIRED >>>

<<< DEMAND SIGNALS HAVE BEEN DETERMINED BY SU&T ENGINEERS. ALL HORIZONTAL
METERS ON BOTTOM OF CONTROLLERS ARE DEMAND SIGNALS. A GENERIC CONVENTION FOR
LABEL LOCATION HAS BEEN ESTABLISHED. VALVE NUMBERS SHALL BE PLACED ON LABELS.
CONTROLLER FUNCTIONS
ARE BEING REVIEWED TO ENSURE LABEL ACCURACY >>>

ACTION:

APPROVED BY GSU MANAGEMENT <<< LABELS HAVE BEEN ORDERED AND WILL BE
IMPLEMENTED ON A GENERIC BASIS THROUGHOUT THE CONTROL ROOM PRIOR TO EXCEEDING
5% POWER >>>

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 09/19/84

HED NO.: 795

REVIEWER: LINK

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OPERATING PERSONNEL INTERVIEW

CHECKLIST NO.: B2

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P863

(1.)

DESCRIPTION OF DISCREPANCY:

THERE IS NO INDICATION OF CONTAINMENT ANNULUS PRESSURE

RECOMMENDATIONS:

RECORDER 1LMS-TR127 ON P-863 INDICATES CONTAINMENT ANNULUS PRESSURE. LABEL REQUIRES CHANGING.

<<<SECONDARY CONTAINMENT INTEGRITY IS NOT REQUIRED FOR FUEL LOAD PER TECH. SPEC. 3/4.6.5, THEREFORE THIS CHANGE IS NOT REQUIRED PRIOR TO FUEL LOAD >>>

ACTION:

CHANGE LABEL TO READ 1LMS-TR127 ANNULUS TEMPERATURE/PRESSURE.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 22

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B5.10

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:

PHYSICAL DISTINCTION BETWEEN PUMPS AND VALVES IS NOT USED. INSERT 4C-SAME SWITCH TYPE IS USED FOR VALVES AND BREAKERS. C33-C001A RWCU PUMP A&B. USE SAME SWITCH FOR BREAKERS AND PUMPS.

RECOMMENDATIONS:

COLOR CODING ON BENCHBOARD FOR PUMPS AND FANS TO DISTINGUISH FROM VALVES & DAMPERS

<<< COLOR CODING CONVENTIONS HAVE BEEN DEVELOPED AND WILL BE APPLIED THROUGHOUT THE MAIN CONTROL ROOM ON A GENERIC BASIS PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/22/84

HED NO.: 287

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B6.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P601-19

DESCRIPTION OF DISCREPANCY:
RESET BUTTONS ARE NOT ACCURATELY MARKED

RECOMMENDATIONS:
RELABEL TO INDICATE PROPER FUNCTION.
<<< THE FUNCTION OF RESET BUTTONS HAS BEEN REVIEWED AND LABEL CORRECTIONS ARE
BEING MADE >>>

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 540

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: SA1.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-01

(1.)

PANEL/WORKSTATION NO. P680-02

(1.)

PANEL/WORKSTATION NO. P680-03

(1.)

DESCRIPTION OF DISCREPANCY:

THE ASSOCIATION OF FEEDBACK INDICATION TO RELATED CONTROLS IS NOT MADE READILY APPARENT THROUGH LABELING, MIMICS, DEMARCATION LINES OR POSITION.

RECOMMENDATIONS:

ADD MIMIC, LABELING, DEMARCATIONS AS REQUIRED.

<<<LABELING, MIMIC AND LINES OF DEMARCATION ARE BEING CHANGED/CORRECTED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 498

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: SA3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-01C
(1.)

DESCRIPTION OF DISCREPANCY:

THE ASSOCIATION OF FEEDBACK IDENTIFICATION TO RELATED CONTROLS IS NOT MADE READILY APPARENT THROUGH LABELING, MIMICS, DEMARCATION LINES OR POSITION.

RECOMMENDATIONS:

ADD DEMARCATION AND ENHANCEMENTS AS REQUIRED TO MAKE ASSOCIATION READILY APPARENT

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 454

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: SA3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-06C
(1.)

DESCRIPTION OF DISCREPANCY:

THE ASSOCIATION OF FEEDBACK INDICATION TO RELATED CONTROLS IS NOT READILY APPARENT THROUGH LABELING, MIMICS, DEMARCATION LINES OR POSITION. (IRM BYPASS)

RECOMMENDATIONS:

IMPLEMENT COLOR CODING OF SWITCHES AND RECORDERS

<<<IT WAS DETERMINED THAT COLOR CODING WOULD NOT BE APPROPRIATE. HEIRARCHICAL LABELING WILL BE ADDED TO THE SYSTEM/SUBSYSTEM >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 410

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: SA3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-2

PANEL/WORKSTATION NO. P680-3

DESCRIPTION OF DISCREPANCY:

THE ASSOCIATION OF FEEDBACK INDICATION TO RELATED CONTROLS IS NOT MADE READILY APPARENT THROUGH LABELING, MIMICS, DEMARCATION LINES, OR POSITION ON CONTROL/DISPLAY GROUPING.

RECOMMENDATIONS:

ADD MIMICS, LINES OF DEMARCATION

<<<MIMIC IS BEING ADDED TO REFLECT PROPER SYSTEM CONFIGURATION>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 503

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: SB1.4

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680-1

DESCRIPTION OF DISCREPANCY:
PROCESS UNITS AND MULTIPLIERS ARE NOT SPECIFIED. (NOT ON RECORDER)

RECOMMENDATIONS:
CHANGE LABELS FOR RECORDERS ON P680 TO INDICATE UNITS

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO. : 457

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: SB1.4

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680-4

PANEL/WORKSTATION NO. P680-5

PANEL/WORKSTATION NO. P680-6

DESCRIPTION OF DISCREPANCY:

PROCESS UNITS AND MULTIPLIERS ARE NOT SPECIFIED. (SRM LOG COUNT RATE RECORDERS , RECIRC LOOP A/B FLOW RECORDER, AND TOTAL FLOW/DELTA PRESSURE RECORDER HAVE NO UNITS). UPGRADED DUE TO IMPORTANCE OF INDICATION.

RECOMMENDATIONS:

CHANGE LABELS TO INDICATE UNITS.

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 422

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. GENERIC

DESCRIPTION OF DISCREPANCY:

LABELS, LEGEND PLATES, AND ESCUTCHEONS ARE NOT USED TO IDENTIFY OPERATIONAL LIMITS OR WARNINGS, SOME METERS HAVE LIMITS SOME DO NOT.

RECOMMENDATIONS:

NORMAL/ABNORMAL RANGES WILL BE ADDED TO VISUAL DISPLAYS.

<<< THE BANDING OF VISUAL DISPLAYS IS NOT REQUIRED FOR FUEL LOAD. OPERATOR CONFUSION WILL NOT RESULT FROM ADDING THE BANDING AFTER FUEL LOAD. ALTHOUGH THE BANDING IS CONSIDERED AN ENHANCEMENT, A GREAT DEAL OF ENGINEERING IS INVOLVED IN DETERMINING THE BANDING LIMITS FOR THE METERS. THIS CHANGE WILL BE COMPLETED THROUGHOUT THE CONTROL ROOM ON A GENERIC BASIS PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 30

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B2.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:

INDICATING DEVICES ARE NOT BANDED TO SHOW NORMAL/ABNORMAL STATE

RECOMMENDATIONS:

BAND OR MARK THE INDICATING DEVICES TO SHOW NORMAL/ABNORMAL STATE

<<<THE BANDING OF VISUAL DISPLAYS IS NOT REQUIRED FOR FUEL LOAD. OPERATOR
CONFUSION WILL NOT RESULT FROM ADDING THE BANDING AFTER FUEL LOAD. ALTHOUGH
THE BANDING IS CONSIDERED AN ENHANCEMENT, A GREAT DEAL OF ENGINEERING IS
INVOLVED IN DETERMINING

THE BANDING LIMITS FOR THE METERS . THIS CHANGE WILL BE IMPLEMENTED ON
GENERIC BASIS THROUGHOUT THE CONTROL ROOM PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 355

REVIEWER: SCHROEDER

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: E4.13

CHECKLIST AREA: PROCEDURES

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:
PROCEDURES DO NOT GIVE NORMALLY EXPECTED RESULTS (SUCH AS VALVE POSITIONS,
FLOW RATES, ETC.) WHERE APPROPRIATE

RECOMMENDATIONS:
CONTROL ROOM METERS/INDICATORS WILL BE MARKED TO INDICATE NORMAL OPERATING
BAND.
<<<THE BANDING OF VISUAL DISPLAYS IS NOT REQUIRED FOR FUEL LOAD. OPERATOR
CONFUSION WILL NOT RESULT FROM ADDING THE BANDING AFTER FUEL LOAD. ALTHOUGH
THE BANDING IS CONSIDERED AN ENHANCEMENT, A GREAT DEAL OF ENGINEERING IS
INVOLVED IN DETERMINING THE
BANDING LIMITS FOR THE METERS. THIS CHANGE WILL BE COMPLETED ON A GENERIC
BASIS THROUGHOUT THE CONTROL ROOM PRIOR TO EXCEEDING 5% POWER >>>

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 04/24/84

HED NO.: 775

REVIEWER: SPDS

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OTHER

CHECKLIST NO.:

PANEL/WORKSTATION NO. SPDS
(1.)

DESCRIPTION OF DISCREPANCY:

THERE IS NO DIRECT READOUT OF CST WATER LEVEL EXCEPT THROUGH USE OF THE SPDS AND CRT DISPLAYS

RECOMMENDATIONS:

THIS REG. GUIDE 1.97 CATEGORY 3 PARAMETER MAY BE PROCESSED ON DEMAND FOR DISPLAY AND IS NOT REQUIRED TO BE SEISMICALLY QUALIFIED. THEREFORE, THE PRESENT DESIGN OF DISPLAYING THIS PARAMETER THROUGH THE PROCESS COMPUTER AND SPDS DATABASE IS ADEQUATE.

NO FURTHER ACTION REQUIRED.

<<<CRT DISPLAY IS ADEQUATE. IN ADDITION, CONTROL ROOM HAS A LOW AND HIGH ALARM FOR CST. AUX CONTROL ROOM HAS DIRECT INDICATION AND THERE ARE TWO DIRECT LINES, A RADIO, AND THE GAITRONICS FOR COMMUNICATION BETWEEN THE TWO CONTROL ROOMS>>>

ACTION:

APPROVED BY GSU MANAGEMENT. <<<SPDS WILL BE FULLY FUNCTIONAL BY FEBRUARY 1986 >>>

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 546

REVIEWER: SPDS

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OTHER

CHECKLIST NO.: SPDS

CHECKLIST AREA: CHECKLIST AREA NOT FOUND

PANEL/WORKSTATION NO. SPDS

DESCRIPTION OF DISCREPANCY:

SUPPRESSION POOL TEMPERATURE METER DOES NOT PROVIDE A CATEGORY 1 DISPLAY OF THE BULK AVERAGE POOL TEMPERATURE ON EITHER 1H13*P808 OR 1H13*P601

RECOMMENDATIONS:

THE PRESENT DESIGN OF THE NORMAL SUPPRESSION POOL TEMPERATURE MONITORING SYSTEM SATISFIES THE RECOMMENDATIONS OF GE DOCUMENT NO. 22A4379, REVISION 1, SUPPRESSION POOL TEMPERATURE MONITORING SYSTEM. AVERAGE POOL TEMPERATURE CAN BE OBTAINED BY MANUALLY

AVERAGING THE OUTPUTS FROM THE TEMPERATURE SENSORS THAT ARE DISTRIBUTED EVENLY AROUND THE POOL. OPERATOR ACTIONS, DUE TO HIGH POOL TEMPERATURE DESCRIBED IN TECHNICAL SPECIFICATION NO. 3/4.6.3.1, WILL BE BASED UPON THE HIGHEST READING TEMPERATURE

SENSOR WHICH WILL ACTIVATE AN ALARM ON 1H13*P808. THE OPERATOR THEN WOULD HAVE SUFFICIENT TIME (LESS THAN 24 HOURS) TO TAKE CORRECTIVE ACTION. THEREFORE, A BULK SUPPRESSION POOL TEMPERATURE AVERAGING SYSTEM IS NOT REQUIRED.

ACTION:

APPROVED BY GSU MANAGEMENT. <<<THIS HED DOES NOT REQUIRE THE USE OF THE SPDS. SPDS WILL BE FULLY FUNCTIONAL BY FEBRUARY 1986 >>>

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 547

REVIEWER: SPDS

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OTHER

CHECKLIST NO.: SPDS

CHECKLIST AREA: CHECKLIST AREA NOT FOUND

PANEL/WORKSTATION NO. SPDS

DESCRIPTION OF DISCREPANCY:

SLCS TANK LEVEL DOES NOT MEET THE EQUIPMENT QUALIFICATION GUIDELINES SET FORTH BY R. G. 1.97, REVISION 3.

RECOMMENDATIONS:

THE SLCS IS NOT REQUIRED TO PROVIDE A SAFETY FUNCTION DURING ANY POSTULATED PIPE BREAK EVENTS. THE SLCS TANK LEVEL INSTRUMENTATION IS CONTAINED IN ENVIRONMENTAL ZONE CT-4, WHICH HAS A MILD ENVIRONMENT DURING NONACCIDENT CONDITIONS.

WHILE THIS SYSTEM IS SAFETY-RELATED, IT IS CONSIDERED LESS IMPORTANT TO SAFETY THAN THE REACTOR PROTECTION SYSTEM. THEREFORE, THE REGULATORY GUIDE CATEGORY 2 REQUIRE. IS NOT CONSIDERED APPROPRIATE, AND CATEGORY 3 INSTRUMENTATION IS USED.

NO FURTHER ACTION REQUIRED. <<< THIS HED DOES NOT REFERENCE THE USE OF THE SPDS. SPDS WILL BE FULLY FUNCTIONAL BY FEBRUARY 1986 >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO. : 551

REVIEWER: SPDS

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OTHER

CHECKLIST NO.: SPDS

CHECKLIST AREA: CHECKLIST AREA NOT FOUND

PANEL/WORKSTATION NO. SPDS

DESCRIPTION OF DISCREPANCY:

DRYWELL DRAIN SUMP WATER LEVEL IS NOT CATEGORY 1 PER RG 1.97.

RECOMMENDATIONS:

NO ACTION. TECHNICAL JUSTIFICATION ON P.35 & 36 OF REFERENCE "K" IN SUMMARY REPORT.

<<<THIS HED DOES NOT REFERENCE THE USE OF THE SPDS. SPDS WILL BE FULLY FUNCTIONAL BY FEBRUARY 1986 >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 554

REVIEWER: SPDS

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OTHER

CHECKLIST NO.: SPDS

CHECKLIST AREA: CHECKLIST AREA NOT FOUND

PANEL/WORKSTATION NO. SPDS

DESCRIPTION OF DISCREPANCY:

THE DESIGN OF RBS DOES NOT PROVIDE FOR MAIN CONTROL ROOM INSTRUMENTATION WHICH COVERS THE RANGE REQUIRED FOR THE CONTAINMENT WATER LEVEL.

RECOMMENDATIONS:

INVESTIGATE THE EXPANSION OF RANGE ON CONTAINMENT WATER LEVEL INDICATIONS IN CONTROL ROOM

<<< THIS HED DOES NOT REFERENCE THE USE OF SPDS. SPDS WILL BE FULLY FUNCTIONAL BY FEBRUARY 1986 >>>

ACTION:

NO ACTION. TECHNICAL JUSTIFICATION ON P. 40 OF REFERENCE "K" IN SUMMARY REPORT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 555

REVIEWER: SPDS

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OTHER

CHECKLIST NO.: SPDS

CHECKLIST AREA: CHECKLIST AREA NOT FOUND

PANEL/WORKSTATION NO. SPDS

DESCRIPTION OF DISCREPANCY:

DIRECT READOUT OF PRIMARY CONTAINMENT ANNULUS DIFFERENTIAL PRESSURE IS NOT AVAILABLE IN THE MAIN CONTROL ROOM OR THE SPDS DATABASE.

RECOMMENDATIONS:

THIS VARIABLE IS AVAILABLE IN THE SPDS DATA BASE (HVRPY222,HVRPY223). WITH THIS INFORMATION, THE OPERATORS CAN CONTROL THE RATE OF DEPRESSURIZATION OF THE CONTAINMENT INTO THE ANNULUS OF THE CONTAINMENT. THEREFORE, NO DESIGN CHANGE IS NECESSARY.

<<<ANNULUS PRESSURE IS AVAILABLE ON P863 AND CONTAINMENT PRESSURE IS AVAILABLE ON P808. RATE OF DEPRESSURIZATION CAN BE CONTROLLED WITH THESE PARAMETERS. SPDS WILL BE FULLY FUNCTIONAL BY FEBRUARY 1986 >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 05/01/84

HED NO.: 399

REVIEWER: CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OTHER

CHECKLIST NO.:

PANEL/WORKSTATION NO. ERIS

DESCRIPTION OF DISCREPANCY:

THE PROPOSED ERIS CONSOLE LOCATION REQUIRES CAREFUL REVIEW TO DETERMINE IF THE LOCATION IS OPTIMUM TO SUPPORT THE OPERATORS

RECOMMENDATIONS:

DESIGN A CONTROL ROOM FOREMAN'S DESK THAT WILL ACCOMMODATE THE TWO ERIS DISPLAYS ON EITHER END. THIS IS OPTIMUM DESIGN TO SUPPORT OPERATORS.

<<<THE DESIGN IS COMPLETE AND HAS BEEN IMPLEMENTED. TABLE HAS BEEN FABRICATED AND INSTALLED PER THE E&DCR LISTED BELOW >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR# C52,757

ISSUE DATE 01/31/85

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 07/06/84

HED NO.: 576

REVIEWER: LER/LIDDLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OPERATIONAL EXPERIENCE REVIEW

CHECKLIST NO.:

PANEL/WORKSTATION NO. LER-373-82072

DESCRIPTION OF DISCREPANCY:

LER (LASALLE) WHILE UNDERGOING A STARTUP THE 100 DEGREE/HR HEATUP RATE WAS EXCEEDED. THE CAUSE WAS AN OVER DEPENDENCE ON THE CRT BY THE OPERATORS

RECOMMENDATIONS:

GSU OPERATORS ARE NOT NORMALLY GOING TO USE THE CRT TO PLOT HEAT-UP RATE. A RECORDER ON P-845 WILL BE USED.

<<<PROCEDURE GOP-0001 REQUIRES THE RECORDING OF HEATUP RATE INFORMATION.>>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE . / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE:

APPENDIX G

SAFETY EVALUATION REPORT

HUMAN ENGINEERING DISCREPANCIES

FROM T.E.R. APPENDIX B

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO. : 114

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-74

(1.)

PANEL/WORKSTATION NO. P863-75

(1.)

DESCRIPTION OF DISCREPANCY:
COMPONENTS ORDERED LEFT/RIGHT

RECOMMENDATIONS:

DIVISIONAL SEPARATION CRITERIA DICTATES THE PRESENT COMPONENT ORDERING. NO ACTION.

<<< C60,972 HAS BEEN GENERATED SINCE THIS HED WAS WRITTEN. IT IMPROVES THE GROUPING OF CONTROLS INTO AN OPTIMUM ARRANGEMENT FOR THE DIVISIONAL SEPARATION CONSIDERATIONS THAT EXIST. WORK WILL BE COMPLETE PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/21/84

HED NO. : 268

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.6

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P870-55

PANEL/WORKSTATION NO. P870-56

DESCRIPTION OF DISCREPANCY:

TOP ROW OF METERS IS 72 INCHES OFF THE GROUND<<< (BOTTOM/TOP 66.5 IN/72 IN)>>> AND FOUR ROTARY CONTROLS ARE 65 INCHES

RECOMMENDATIONS:

NO ACTION. THIS IS STANDARD HEIGHT FOR METERS IN THE CONTROL ROOM. <<<THE FOUR CONTROLS ARE OFF/ON SWITCHES FOR INOPERABILITY INDICATION LIGHTS. THEY DO NOT CONTROL ANY SYSTEM FUNCTIONS. THEY ARE LOCATED THERE TO BE IN CLOSE PROXIMITY TO THEIR RELATED INOP. LIGHTS. SWITCHES THAT PERFORM A FUNCTION ARE 60" OR LESS FROM THE FLOOR. METERS FACES ARE BOTTOM/TOP 66.5"/72" & ARE CLEARLY VISIBLE BY ALL OPERATORS.>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/20/84

HED NO.: 299

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.10

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P601-16
(1.)

DESCRIPTION OF DISCREPANCY:
THERE IN AN UNLABELED METER ON P601-16

RECOMMENDATIONS:
THE METER IS BLANK. NO ACTION REQUIRED.
<<< SINCE THIS HED WAS WRITTEN, THE SERVICE WATER PUMP C AMPS METER HAS BEEN
LOCATED IN THIS POSITION . NO FURTHER ACTION REQUIRED >>>

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO. : 228

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B1.3

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. GENERIC

DESCRIPTION OF DISCREPANCY:

<<<DUE TO THE CONSTRUCTION PHASE OF RBS, BAILEY CONTROLLERS ARE COLLECTING DIRT IN THE BUTTONS. THIS WILL, OVER A PERIOD OF TIME, OBSCURE THE WORDS 'CLOSE' AND 'OPEN' ON THE BUTTONS>>>

RECOMMENDATIONS:

ALL RBS BAILEY CONTROLLERS ARE LAYED OUT THE SAME WITH CLOSE BUTTON ON LEFT CORRESPONDING TO 0% & OPEN ON RIGHT CORRESPONDING TO 100%. NO ACTION.
<<<THE MAIN CONTROL ROOM WAS IN THE CONSTRUCTION PHASE WHEN THIS HED WAS GENERATED. ONCE THIS PHASE IS COMPLETED, GSU OPERATIONS CAN MONITOR CONTROL BOARD CLEANLINESS AND INITIATE CLEANING AS REQUIRED >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 09/19/84

HED NO.: 827

REVIEWER: LINK

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OPERATING PERSONNEL INTERVIEW

CHECKLIST NO.: B2

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P601
(1.)

DESCRIPTION OF DISCREPANCY:

<<<SYSTEM PARAMETERS DISPLAYED ON ECCS (LPCS) PANELS ARE AMPS AND FLOW INDICATORS ONLY. ALSO NEED PRESSURE INDICATION >>>

RECOMMENDATIONS:

<<<LPCS IS DESIGNED PRIMARILY FOR RE-FLOOD AFTER A DESIGN BASED LOCA WHERE R_x PRESSURE IS "LOW". DURING TRAINING ON THE SIMULATOR, OPERATORS ARE TAUGHT IN PART, TO MONITOR LPCS SYSTEM STATUS AS A FUNCTION OF RPV PRESSURE (IE. ALTHOUGH THE LPCS SYSTEM WILL INITIATE UPON RECEIPT OF A HIGH DRYWELL PRESSURE OR LOW R_x WATER LEVEL SIGNAL, IT WILL NOT INJECT INTO THE RPV UNTIL RPV PRESSURE DECREASES TO BELOW THE LPCS INJECTION VALVE INTERLOCK PRESSURE). IN ADDITION, OPERATORS ARE TRAINED TO KEY IN ON FLOW RATES, AND THE RELATIONSHIP BETWEEN PUMP HEAD AND FLOW RATES. POSITIVE INDICATION OF FLOW IS GIVEN FROM THE FLOW METER AND DIRECTLY THROUGH THE TESTABLE CHECK VALVE WHICH HAS DIRECT INDICATION OF POSITION. LPCS SYSTEM PRESSURE IS NOT REQUIRED>>>

ACTION:

APPROVED BY GSU MANAGEMENT <<<INFO. REQUIRED IS DOCUMENTED IN TASK SEQUENCE #1570-1590 (R_x DEPRESSURIZATION BY MEANS OF ADS TO ALLOW LPCS INJECTION) AND TASK SEQUENCE 1590 & 1610 (RPV PRESSURE/INJECTION VALVE INTERLOCK). NO FURTHER ACTION REQUIRED>>>

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 18

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B2.13

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. C61-P001

(1.)

DESCRIPTION OF DISCREPANCY:

RPV PRESSURE HAS SUBDIVISIONS IN MULTIPLES OF 3

RECOMMENDATIONS:

NO ACTION. OPERATIONS PERSONNEL FIND THE SCALE ON THIS METER TO BE APPROPRIATE. <<< THE SCALE HAS MINOR INCREMENTS OF 20, INTERMEDIATE INCREMENTS OF 100, AND MAJOR INCREMENTS OF 300 . THE ORIGINAL DESCRIPTION OF DISCREPANCY WAS MISLEADING >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO. : 435

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B4.2

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680-4

PANEL/WORKSTATION NO. P680-5

PANEL/WORKSTATION NO. P680-6

DESCRIPTION OF DISCREPANCY:

UNLIGHTED INDICATING LIGHTS DO NOT CONSISTENTLY REFLECT A NEGATIVE STATE OF "POWER OFF". (SCRAM SD. VALVE INDICATING LIGHTS GO OUT WHEN SCRAM SIGNAL IS IN.)

RECOMMENDATIONS:

<<<SIMULATOR>>> TRAINING PROPERLY ADDRESSES THIS. THE SCRAM STATUS IS ALSO ANNUNCIATED.

<<< THE SCRAM SOLENOID LIGHT INDICATES THAT THE SCRAM SOLENOID IS ENERGIZED. WHEN YOU LOSE INDICATION, YOU HAVE LOST POWER TO THESE SOLENOIDS. THESE ARE WHITE, POWER AVAILABLE LIGHTS . THIS IS CONSISTENT WITH RBS CONVENTIONS. NO FURTHER ACTION REQUIRED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/21/84

HED NO.: 660

REVIEWER: BURG/CHASE/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B5.6

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P601-20C

PANEL/WORKSTATION NO. P601-17C

DESCRIPTION OF DISCREPANCY:

FOR SWITCHES, HANDLES ARE NOT DURABLE AND OF ADEQUATE SIZE.

RECOMMENDATIONS:

INVESTIGATE CHANGING SWITCH HANDLES

<<<THESE "PISTOL GRIP" SWITCHES ARE MADE BY ELECTROSWITCH AND ARE A STANDARD DESIGN USED IN THE NUCLEAR INDUSTRY. THE OPERATOR ON THE SURVEY REVIEW TEAM HAD A PREFERENCE FOR THE LARGER HANDLED SWITCHES FOUND ON OLDER CONTROL BOARDS. THIS PREFERENCE IS NOT SHARED BY THE GSU OPERATIONS DEPT. THAT TYPE OF SWITCH IS NOT APPROPRIATE FOR THE RBS CONTROL BOARDS AND IS NOT NECESSARY. THE ELECTROSWITCH SWITCH IS DURABLE AND APPROPRIATELY SIZED FOR RBS.>>>

ACTION:

NO ACTION. THESE SWITCHES ARE APPROPRIATE AND ARE USED TO DISTINGUISH PUMPS FROM VALVES.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/21/84

HED NO.: 661

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B5.8

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P601-20C
PANEL/WORKSTATION NO. P601-17C

DESCRIPTION OF DISCREPANCY:
FOR SWITCHES, ASSOCIATED DISPLAYS, INDICATING LIGHTS, AND LABELS ARE NOT FREE
FROM VISUAL OBSTRUCTION BY HAND OR ARM WHEN SWITCH IS OPERATED.

RECOMMENDATIONS:
EVALUATION BY OPERATIONS DETERMINED THAT LAYOUT OF CONTROLS & DISPLAYS IS
CORRECT AND THAT NO CHANGE IS REQUIRED.
<<<THIS INSERT WAS REVIEWED AGAIN TO DETERMINE WHAT THE EXACT DISCREPANCY WAS
OR IS. NO VISUAL OBSTRUCTION BY HAND OR ARM WAS FOUND WHEN OPERATING
SWITCHES. MODIFICATIONS HAVE OCCURRED ON THIS INSERT SINCE THE ORIGINAL
SURVEY WAS COMPLETED.
THE REVIEW TEAM BELIEVES THAT THE DISCREPANCY WAS ELIMINATED IN THAT
MANNER.>>>

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/22/84

HED NO.: 290

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C2.7

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P601-19A

DESCRIPTION OF DISCREPANCY:

MULTIPLE CHOICE ANNUNCIATORS ON THIS PANEL SUCH AS SLC TANK LEVEL AND TEMP

RECOMMENDATIONS:

NO ACTION. LEVEL METER IS <<<APPROPRIATELY LOCATED>>> ON 19B INSERT. OPERATOR ACTION WILL BE THE SAME WHETHER TEMP. IS HIGH OR LOW <<< (DISPATCH AN OPERATOR IN A TIMELY MANNER TO THE TANK >>>

<<< 1) STANDBY LIQUID HEAT TRACE TEMP. HI/LOW/POWER LOSS; OFFGAS COMB. PRETREAT SAMPLE HI/LOW FLOW; OFFGAS POST-TREAT SAMPLE HI/LOW FLOW; AND OFFGAS VENT PIPE SAMPLE HI/LOW FLOW ANNUNCIATORS ARE ON THIS INSERT. THE OPERATOR ACTION WILL BE THE SAME FOR THESE ANNUNCIATORS ALSO. 2) NEEDED INSTRUMENTATION IS ON 19B INSERT WHICH IS DIRECTLY BELOW ANNUNCIATORS. 3) AN NEO WILL BE DISPATCHED FROM THE CONTROL ROOM TO EVALUATE THE ANNUNCIATED CONDITION. THIS IS CONSISTENT WITH GOOD HUMAN FACTORS PRINCIPLES >

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 543

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: SB4.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680

DESCRIPTION OF DISCREPANCY:

KEY-OPERATED SWITCHES ARE NOT USED ONLY WHERE APPROPRIATE (i.e. TO PREVENT UNAUTHORIZED CONTROL ACTUATION.) <<<SCRAM RESET SWITCHES SHOULD NOT BE KEYLOCK >>>

RECOMMENDATIONS:

NO ACTION. OPERATORS ARE WELL TRAINED ON THE USE OF THESE SWITCHES .<<<SINCE THIS HED WAS SUBMITTED, THE DECISION WAS MADE TO CHANGE THE SCRAM RESET SWITCHES SO THAT THEY ARE NOT KEY-LOCK TYPE (SEE HED 417)>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/22/84

HED NO.: 288

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C1.1

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P601-18

PANEL/WORKSTATION NO. P601-19

PANEL/WORKSTATION NO. P601-22

DESCRIPTION OF DISCREPANCY:

ANNUNCIATORS ARE NOT GROUPED BY SPECIFIC SYSTEM

RECOMMENDATIONS:

OPERATIONS EVALUATED THE ANNUNCIATOR ARRANGEMENTS AND FOUND THEM TO BE APPROPRIATE. NO FURTHER ACTION REQUIRED. <<< SINCE SURVEY, SEVERAL ALARM WINDOWS HAVE BEEN CHANGED. THE ANNUNCIATORS ARE NOW APPROPRIATELY GROUPED. ANNUNCIATORS ARE LOCATED ABOVE THE SYSTEMS THEY ARE ASSOCIATED WITH, WITH THE EXCEPTION OF CERTAIN OFFGAS ANNUNCIATORS. THE MONITORS ARE LOCATED ON P604 WHICH HAS NO ANNUNCIATOR INSERT, THEREFORE, THESE ALARM ARE GROUPED ON THIS INSERT.

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 59

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C1.1

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P808-85A

(1.)

DESCRIPTION OF DISCREPANCY:

CONTAINMENT PENETRATION ANNUNCIATORS SHOULD BE LOCATED IN INSERT 83A OR 84A

RECOMMENDATIONS:

FURTHER EVALUATION HAS DETERMINED THAT PRESENT LOCATION IS PROPER. NO ACTION.
<<< SINCE THIS HED WAS WRITTEN, THESE ANNUNCIATORS HAVE BEEN DELETED. NO
FURTHER ACTION REQUIRED.>>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 451

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C5.6

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:

ALARM RESPONSE IS NOT PROVIDED A "FIRST-OUT" FEATURE OR DUAL RESET FOR INFORMATION RETRIEVAL HIGH PRIORITY ALARMS.

RECOMMENDATIONS:

BOTH SPDS AND PMS HAVE SEQUENCE OF EVENTS FEATURE FOR PRE-SELECTED HIGH PRIORITY ALARMS. NO FURTHER ACTION REQUIRED. <<<ANNUNCIATORS THAT CAUSE R_x SCRAM OR LARGE EQUIPMENT MALFUNCTIONS WILL BE CODED RED SO THAT INCIDENT CAUSING ALARMS ARE EASILY IDENTIFIABLE. ALERT STATUS ALARMS WILL BE CODED AMBER TO INDICATE A POTENTIAL CONDITION THAT COULD CAUSE A R_x SCRAM OR LARGE EQUIPMENT MALFUNCTION. ALARM ARE ON ALARM PRINTER. SPDS WILL BE FULLY FUNCTIONAL BY FEBRUARY 1986.>>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 195

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: CONTROL ROOM SURVEY - NUREG 0700

CHECKLIST NO.:

GUIDELINE AREA: CONTROL ROOM WORKSPACE

PROBLEM CATEGORY: ENVIRONMENT

PROBLEM SUB-CATEGORY: ILLUMINATION

PANEL/WORKSTATION NO. ERIS

DESCRIPTION OF DISCREPANCY:

ILLUMINATION IS BELOW THE RECOMMENDED 50 FOOTCANDLES

RECOMMENDATIONS:

INVESTIGATE METHODS OF INCREASING ILLUMINATION

<<< A LIGHTING SURVEY WAS CONDUCTED BY R. LIDDLE AND D. CHASE ON 5/2/85. THE IMPROVED LIGHTING DESIGN INCREASED THE LIGHTING LEVELS SUCH THAT ALL READINGS WERE IN COMPLIANCE WITH NUREG 0700 GUIDANCE. NO FURTHER ACTION REQUIRED >>>

ACTION:

STONE & WEBSTER IS EVALUATING CONTROL ROOM ILLUMINATION AS A RESULT OF DCRDR. FINAL LIGHT READINGS WILL BE TAKEN AFTER DESIGN CHANGES (IF ANY) ARE IMPLEMENTED & FLOORING IS INSTALLED.

E&DCR# P-22305
FDDR#

ISSUE DATE 01/11/85
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 202

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B2.3

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P870-54

(1.) 1GMC-PIEPR-15 STATOR COOLING WATER PRESS

DESCRIPTION OF DISCREPANCY:

THE LIGHTING IN THE CONTROL ROOM IS NOT EVEN

RECOMMENDATIONS:

INVESTIGATE WAYS IMPROVING THE CONTROL ROOM LIGHTING

A LIGHTING SURVEY WAS CONDUCTED BY R. LIDDLE AND D. CHASE ON 5/2/85. THE IMPROVED LIGHTING DESIGN INCREASED THE LIGHTING LEVELS. THIS EVENED OUT THE CONTROL ROOM LIGHTING BECAUSE THE LIGHTING SURROUNDING THE MAIN CONTROLS AREA HAD PREVIOUSLY BEEN

BRIGHTER. NO FURTHER ACTION REQUIRED >>>

ACTION:

STONE & WEBSTER IS EVALUATING THE CONTROL ROOM ILLUMINATION AS A RESULT OF DCRDR. FINAL LIGHT READINGS WILL BE TAKEN AFTER DESIGN CHANGES (IF ANY) ARE IMPLEMENTED AND FLOORING IS INSTALLED.

E&DCR# P-22305

FDDR#

ISSUE DATE 01/11/85

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 552

REVIEWER: SPDS

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OTHER

CHECKLIST NO.: SPDS

CHECKLIST AREA: CHECKLIST AREA NOT FOUND

PANEL/WORKSTATION NO. SPDS

DESCRIPTION OF DISCREPANCY:

RBS DOES NOT FURNISH THE SOURCE RANGE (SRM) AND INTERMEDIATE RANGE (IRM) NEUTRON DETECTOR DRIVE POSITIONING MODULES WITH CLASS 1E POWER.

RECOMMENDATIONS:

SEVERAL SOLUTIONS ARE PRESENTLY BEING EVALUATED BY GSU TO ADDRESS THIS CONCERN. DUE TO THE SUBMITTAL DEADLINE FOR THIS REPORT, THE FINAL DETAILED TECHNICAL EVALUATION BY GSU, S & W AND GE COULD NOT BE COMPLETED TO BE INCLUDED IN THIS REPORT.

<<< THE TECHNICAL EVALUATION HAS BEEN COMPLETED. IT WAS DETERMINED THAT NO MODIFICATIONS ARE REQUIRED FOR THE EXISTING SYSTEM. THIS EVALUATION SHALL BE PUBLISHED IN THE RBS REG. GUIDE 1.97 REV. 3 COMPLIANCE REPORT, SCHEDULED FOR NRC SUBMITTAL BY FUEL LOAD >>>

ACTION:

SUBMIT RESOLUTION PLAN PRIOR TO FUEL LOAD. <<< SUBMIT RG 1.97 COMPLIANCE REPORT BY FUEL LOAD>>>.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 82

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: 5.6

CHECKLIST AREA: CHECKLIST AREA NOT FOUND

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:
G.S.U. ENGRAVED LABELS ARE HARD TO READ

RECOMMENDATIONS:
CHANGE ILLEGIBLE GSU LABELS TO USE A MORE DISTINCTIVE LABEL
<<<THIS GENERIC CHANGE WILL BE COMPLETED THROUGHOUT THE CONTROL ROOM PRIOR TO
EXCEEDING 5% POWER >>>

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 238

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A1.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-81B

PANEL/WORKSTATION NO. P808-83B

PANEL/WORKSTATION NO. P808-84B

DESCRIPTION OF DISCREPANCY:

<<<INOPERABILITY INDICATOR LIGHTS HAVE HANDWRITTEN LEGENDS AND ARE HARD TO READ. MAKE PERMANENT LABEL.>>>

RECOMMENDATIONS:

CHANGE STATUS MATRICES LEGENDS TO ALLOW EASE OF READING

<<< LEGENDS WILL BE CHANGED PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 76

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.10

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71

(1.) 1HVR*A02 264

(2.) 1HRV*A0D18B

PANEL/WORKSTATION NO. P863-72

(1.) 1HRV*A0D18B

PANEL/WORKSTATION NO. P863-73

(1.) 1HRV*A0D18B

DESCRIPTION OF DISCREPANCY:
NO STARTING OR ENDING POINTS ARE IDENTIFIED

RECOMMENDATIONS:

ADD STARTING AND ENDING POINTS

<<<THE MIMIC WILL BE CHANGED TO SHOW PROPER SYSTEM CONFIGURATION WHICH
INCLUDES STARTING AND END POINTS . TECH SPEC 3.6.5.4 ONLY REQUIRES THIS
SYSTEM IN CONDITIONS 1,2,& 3. THIS SYSTEM IS NOT, REQUIRED FOR FUEL LOAD >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 113

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.10

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-74C

(1.)

PANEL/WORKSTATION NO.

(1.)

PANEL/WORKSTATION NO. P863-75C

(1.)

DESCRIPTION OF DISCREPANCY:

STARTING AND ENDING POINTS ARE NOT IDENTIFIED ON MIMIC

RECOMMENDATIONS:

IDENTIFY STARTING AND ENDING POINTS

<<<SINCE THE SURVEY, STARTING AND END POINTS HAVE BEEN ADDED TO THE MIMIC .
NO FURTHER ACTION REQUIRED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 128

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:
LINES OF DEMARCATION ARE NOT USED TO ENCLOSE RELATED DISPLAYS

RECOMMENDATIONS:
USE LINES OF DEMARCATION TO ENCLOSE RELATED DISPLAYS
<<< LABELS, LINES OF DEMARCATION AND COLOR PADS WILL BE USED TO ENCLOSE
RELATED DISPLAYS . THIS GENERIC CHANGE WILL BE IMPLEMENTED THROUGHOUT THE
CONTROL ROOM PRIOR TO EXCEEDING 5% POWER >>>

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 239

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P870-51C

PANEL/WORKSTATION NO. P870-52C

DESCRIPTION OF DISCREPANCY:

COLOR DEMARCATION NEEDED TO CONNECT SWITCHES IN SYSTEM

RECOMMENDATIONS:

ADD DEMARCATIONS TO CONNECT SWITCHES IN SYSTEM

<<< DEMARCATION WILL BE ADDED TO RELATE CONTROLS WITH THE SYSTEM >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO. : 72

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71C

(1.)

PANEL/WORKSTATION NO. 72C

(1.)

PANEL/WORKSTATION NO. 73C

(1.)

DESCRIPTION OF DISCREPANCY:

LINES OF DEMARCATION ARE NOT USED TO SEPARATE SYSTEMS OR SUBGROUPS

RECOMMENDATIONS:

USE LINES OF DEMARCATION TO SEPARATE SYSTEMS

<<< LINES OF DEMARCATION WILL BE ADDED . THE ADDITION OF THESE LINES DURING
THE PERIOD OF INITIAL REACTOR STARTUP OPERATIONS WILL NOT CAUSE OPERATOR
CONFUSION >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 109

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-74C

(1.)

PANEL/WORKSTATION NO. P863-75C

(1.)

DESCRIPTION OF DISCREPANCY:

LINES OF DEMARCATION ARE NOT USED TO PROVIDE SEPARATION

RECOMMENDATIONS:

USE LINES OF DEMARCATION TO SEPARATE SYSTEMS

<<< LINES OF DEMARCATION WILL BE USED. THE ADDITION OF THESE LINES DURING
INITIAL REACTOR STARTUP OPERATIONS WILL NOT CAUSE OPERATOR CONFUSION >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 110

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.4

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-74C

(1.)

PANEL/WORKSTATION NO. P863-75C

(1.)

DESCRIPTION OF DISCREPANCY:

MIMICS ARE NOT USED TO DISTINGUISH BETWEEN PRIMARY AND SECONDARY FLOWPATHS

RECOMMENDATIONS:

USE DIFFERENT WIDTH MIMICS TO DISTINGUISH BETWEEN FLOWPATHS <<< TO USE DIFFERENT WIDTH MIMIC HERE IS NOT POSSIBLE OR PRACTICAL SINCE THE SECONDARY FLOW PATHS USE SOME OF THE PRIMARY PATHS AND THERE IS MORE THAN ONE SECONDARY PATH. THIS WOULD CAUSE THE USE OF SEVERAL DIFFERENT SIZES OF MIMIC. MIMIC WILL BE ADDED TO SHOW PROPER SYSTEM CONFIGURATION >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 203

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.6

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-87B

DESCRIPTION OF DISCREPANCY:

RED MIMIC LINES FALLING OFF OR MISSING ON BATTERY SYSTEM: BROWN SECTIONS ARE LIFTING

RECOMMENDATIONS:

REPLACE/PERMANENTLY ATTACH MIMIC LINES AS REQUIRED

<<<PERMANENT MIMIC HAS BEEN ORDERED AND WILL BE INSTALLED PRIOR TO EXCEEDING 5% POWER. TEMPORARY MIMIC WILL BE INSTALLED PRIOR TO FUEL LOAD AS AN INTERIM CORRECTIVE ACTION>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 313

REVIEWER: SCHROEDER/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.6

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. PB63-76C

DESCRIPTION OF DISCREPANCY:

THERE IS NO FLOW PATH DISPLAYED INTO OR OUT OF 1HVF*AOD101.

RECOMMENDATIONS:

DISPLAY A FLOW PATH

<<<MIMIC HAS BEEN ORDERED AND WILL BE INSTALLED PRIOR TO EXCEEDING 5% POWER.

>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 129

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.7

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P628

(1.)

PANEL/WORKSTATION NO. P631

(1.)

DESCRIPTION OF DISCREPANCY:

FLOW PATH OR LOGICAL ARRANGEMENT IS NOT USED i.e. THE ORDER IS CONFUSING

RECOMMENDATIONS:

RELABEL TO INDICATE IN WHICH STEAMLINE THE VALVE IS LOCATED.

<<< THESE LABELS ARE LOCATED ON BACK PANELS THAT ARE NOT REQUIRED FOR FUEL
LOAD. LABELS WILL BE ADDED PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 73

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.7

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71

(1.)

PANEL/WORKSTATION NO. P863-72

(1.)

PANEL/WORKSTATION NO. P863-73

(1.)

DESCRIPTION OF DISCREPANCY:

VALVES AND FANS ARE NOT ARRANGED IN AN ORDERLY AND EASILY RECOGNIZED MANNER

RECOMMENDATIONS:

COLOR CODING WILL BE ADDED FOR SWITCHES TO DISTINGUISH PUMPS AND VALVES. ADD FLOW DIRECTION ARROWS FOR MIMIC.

<<<SEVERAL ARROWS HAVE BEEN ADDED SINCE THE SURVEY TO CLARIFY FLOWPATH. COLOR CODING OF SWITCHES IS A GENERIC CORRECTIVE ACTION THAT WILL BE COMPLETED PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 111

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.7

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-74C

(1.)

PANEL/WORKSTATION NO. P863-75C

(1.)

DESCRIPTION OF DISCREPANCY:

PORTIONS OF THE MIMIC ARE MISSING/SPARSE USE OF ARROWS MAKE THE FLOW PATH
AMBIGUOUS

RECOMMENDATIONS:

REPAIR MIMICS TO MATCH CONTROL ROOM DESIGN CONVENTION

<<<SINCE THE SURVEY, MIMIC HAS BEEN ADDED IN APPROPRIATE PLACES AND ARROWS
HAVE BEEN ADJUSTED TO REFLECT PROPER FLOW >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/20/84

HED NO.: 294

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.8

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P877-31

PANEL/WORKSTATION NO. P877-32

PANEL/WORKSTATION NO. P601-16

DESCRIPTION OF DISCREPANCY:

MIMIC LINE MISSING BETWEEN 1EJS*SWG 1B & 1EJS*ACB050//AND//1EJS*SWG 2B & 1EJS*ACB066

RECOMMENDATIONS:

INSERT MIMIC LINE BETWEEN SWITCHES

<<< THERE SHOULD NOT BE A MIMIC LINE FROM 1EJS*SWG1B & 1EJS*ACB050. THE OTHER MIMIC WILL BE ADDED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 74

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.9

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71

(1.)

PANEL/WORKSTATION NO. P863-72

(1.)

PANEL/WORKSTATION NO. P863-73

(1.)

DESCRIPTION OF DISCREPANCY:

THERE ARE TOO FEW ARROWS INDICATING THE MIMIC'S FLOW PATH

RECOMMENDATIONS:

ADD ARROWS TO INDICATE FLOW PATH

<<< THE ADDITION OF ARROWS DURING INITIAL STARTUP OPERATIONS WILL NOT CAUSE
OPERATOR CONFUSION. ARROWS WILL BE ADDED PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY BSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/28/84

HED NO.: 112

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.9

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-74

(1.)

PANEL/WORKSTATION NO. P863-75

(1.)

DESCRIPTION OF DISCREPANCY:

ARROWS DO NOT COMPLETELY SHOW FLOW

RECOMMENDATIONS:

USE ARROWS TO SHOW FLOW

<<<THE NEW MIMIC TO BE USED HAS ARROWS INCORPORATED INTO THE TAPE. THE ADDITION OF ARROWS DURING INITIAL STARTUP OPERATIONS WILL NOT CAUSE OPERATOR CONFUSION . ARROWS WILL BE ADDED PRIOR TO EXCEEDING 5% POWER.

ACTION:

APPROVED BY BSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 315

REVIEWER: SCHROEDER/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A2.9

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-76

DESCRIPTION OF DISCREPANCY:

MIMICS ON THIS PANEL ARE NOT CLEARLY MARKED WITH ARROWS TO SHOW DIRECTION OF FLOW.

RECOMMENDATIONS:

CLEARLY MARK MIMICS WITH REGARD TO DIRECTION OF FLOW

<<< THE MIMIC TO BE USED HAS ARROWS INCORPORATED INTO IT . SOME ARROWS HAVE BEEN ADDED SINCE THE SURVEY. THE ADDITION OF ARROWS DURING INITIAL STARTUP OPERATIONS WILL NOT CAUSE OPERATOR CONFUSION >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 104

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71

(1.)

PANEL/WORKSTATION NO. P863-72

(1.)

PANEL/WORKSTATION NO. P863-73

(1.)

DESCRIPTION OF DISCREPANCY:

THE CONTROLS AND FEEDBACK INDICATION RELATIONSHIP IS NOT READILY APPARENT

RECOMMENDATIONS:

USE HIERARCHICAL LABELING OR DEMARCATION TO MAKE THE RELATIONSHIP APPARENT

<<< HEIRARCHICAL LABELING WILL BE ADDED ON A GENERIC BASIS THROUGHOUT THE
CONTROL ROOM PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 317

REVIEWER: SCHROEDER/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-76

DESCRIPTION OF DISCREPANCY:

CONT. CHILLED WATER CONT. A APPEARS ON THE RIGHT INSTEAD OF THE LEFT. THE ORDERING OF THE A AND B INDICATORS IS REVERSED FOR THE CHARCOAL BED OUT TEMPERATURE DISPLAY.

RECOMMENDATIONS:

CHANGE "TO RADWASTE" TO "FROM RADWASTE" LABEL ON MIMIC. CHANGE "HRHX" LABEL TO "1HVR-UC1B CONT. UNIT COOLER. REARRANGE SWITCHES L/R A/B.
<<<LABELS AND SWITCH ARRANGEMENTS WILL BE COMPLETED PRIOR TO EXCEEDING 5% POWER.>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR# C60,589
FDDR# LD1-2625 R0

ISSUE DATE / /
ISSUE DATE 12/11/84

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 224

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.4

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-84C

DESCRIPTION OF DISCREPANCY:

DEMARCATON WOULD ENHANCE THE COMPONENT GROUPING FOR THE SEQUENCE PROGRAMMER CONTROL

RECOMMENDATIONS:

ADD DEMARCATON TO ENHANCE COMPONENT GROUPING.

<<< THE ADDITION OF THESE LINES DURING INITIAL STARTUP OPERATIONS WILL NOT CAUSE OPERATOR CONFUSION. LINES WILL BE ADDED PRIOR TO EXCEEDING 5% POWER.

ACTION:

APPROVED BY GSN MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 509

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A4.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:

SELECTED USE OF COLORS IS NOT CONSISTENTLY APPLIED FOR ALARM PRIORITIZATION
(ALARM COLORS LACK RECOGNIZABLE STANDARD).

RECOMMENDATIONS:

A COLOR PRIORITIZATION CONVENTION WILL BE DEVELOPED AND CONSISTENTLY APPLIED
TO THE RBS CONTROL ROOM PANELS.

<<<THIS GENERIC CHANGE WILL BE COMPLETED THROUGHOUT THE CONTROL ROOM PRIOR TO
EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 11

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A4.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. IRSS-PNL101

(1.) 1SWP*P2A

SERVICE WATER PUMP 2A

DESCRIPTION OF DISCREPANCY:

THE START/STOP SWITCH LABELS FOR THE SWP'S ARE RED AND BLACK

RECOMMENDATIONS:

CHANGE LABELS TO HAVE BLACK BACKGROUND

<<< THE LABELS ON THIS PANEL WILL BE CHANGED TO BE CONSISTENT WITH THE MAIN CONTROL ROOM PRIOR TO EXCEEDING 5% POWER. THIS IS THE REMOTE SHUTDOWN PANEL WHICH IS OUTSIDE OF THE CONTROL ROOM. REMOTE SHUTDOWN PANEL IS NOT A TECH. SPEC. ITEM REQUIRED

FOR FUEL LOAD. THE OPERATORS WILL NOT BE SUBJECTED TO CHANGES IN ENHANCEMENTS DURING INITIAL STARTUP OPERATIONS BECAUSE THIS PANEL WILL NOT BE IN USE >>>

ACTION:

APPROVED BY GSD MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/20/84

HED NO.: 297

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A4.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P601-16

DESCRIPTION OF DISCREPANCY:

SUPP.POOL MIMIC AND MIMIC THROUGH CST IS OF THE WRONG COLOR

RECOMMENDATIONS:

CHANGE MIMICS TO CONFORM TO CONTROL ROOM CONVENTIONS

<<< MIMIC IS BEING VERIFIED AND CHANGES WILL BE INCORPORATED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE . / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 574

REVIEWER: BARKS/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A4.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-85C-1

(1.)

DESCRIPTION OF DISCREPANCY:

YELLOW INDICATOR LIGHTS UNDER 4160V BUS CW AREA SHOULD BE WHITE AND SHOW FUNCTION

RECOMMENDATIONS:

EVALUATE FUNCTION OF LIGHTS & CHANGE COLOR IF VARIES FROM STANDARD CONVENTIONS. EVALUATE LABELING & CHANGE IF APPROPRIATE.

<<< LABELING HAS BEEN EVALUATED AND IS APPROPRIATE. THE INDICATOR LIGHTS HAVE BEEN CHANGED TO WHITE. NO FURTHER ACTION REQUIRED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR# C60,594

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO. : 79

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A4.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71

(1.)

PANEL/WORKSTATION NO. P863-72

(1.)

PANEL/WORKSTATION NO. P863-73

(1.)

DESCRIPTION OF DISCREPANCY:

SERVICE WATER AND CHILLED WATER USES THE SAME COLOR MIMIC

RECOMMENDATIONS:

CHANGE SERVICE WATER MIMIC TO DARK BLUE.

<<< A COLOR CONVENTION HAS BEEN ESTABLISHED FOR MIMIC AND SERVICE WATER WILL
BE CHANGED TO BE CONSISTENT WITH THIS PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 320

REVIEWER: SCHROEDER/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A4.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-76

DESCRIPTION OF DISCREPANCY:

THE MIMIC LINES FOR THE SERVICE WATER AND CHILLED WATER SYSTEMS ARE NOT DISTINGUISHED BY COLOR.

RECOMMENDATIONS:

DISTINGUISH MIMIC LINES BY COLOR TO DIFFERENTIATE THE TWO WATER SYSTEMS
<<< A COLOR CODE CONVENTION HAS BEEN ESTABLISHED FOR RBS MIMIC AND WILL BE
APPLIED TO THESE MIMICS PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

SERVICE WATER TO BE DARK BLUE. CHILLED WATER TO BE LIGHT BLUE.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 09/19/84

HED NO.: 826

REVIEWER: LINK

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OPERATING PERSONNEL INTERVIEW

CHECKLIST NO.: A5

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P601-19

DESCRIPTION OF DISCREPANCY:
LABELS ON ADS MANUAL INITIATION (P601 SECTION 19) READ EITHER "TIME DELAY LOGIC" OR "INSTANTANEOUS LOGIC"

RECOMMENDATIONS:
EVALUATE FUNCTION OF SWITCHES AND CHANGE LABELING IF APPROPRIATE.

ACTION:
EVALUATION HAS DETERMINED THAT LABELS WILL BE CHANGED TO READ "MANUAL INITIATION".

E&DOR# C52,629
FDDR# LD1-2455 RO

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 15

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.11

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. C61-P001
(1.)

DESCRIPTION OF DISCREPANCY:

LABELS ABOVE THE EMERGENCY TRANSFER SWITCHES ARE DUPLICATES

RECOMMENDATIONS:

DELETE ONE SET OF LABELS

THIS IS THE REMOTE SHUTDOWN PANEL WHICH IS OUTSIDE THE MAIN CONTROL ROOM. THE REMOTE SHUTDOWN PANEL IS NOT A TECH SPEC ITEM REQUIRED FOR FUEL LOAD. THE OPERATORS WILL NOT BE SUBJECTED TO CHANGES IN ENHANCEMENTS DURING INITIAL REACTOR STARTUP

OPERATIONS BECAUSE THE PANEL WILL NOT BE IN USE >>>

ACTION:

APPROVED BY GSN MANAGEMENT

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 227

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.11

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-81C
(1.)

DESCRIPTION OF DISCREPANCY:

LABELS ARE POSITIONED UNDER H2 RECOMBINER POWER ADJUST, H2 RECOMBINER TEMP CHANNEL SELECT, AND H2 RECOMBINER POWER OUT

RECOMMENDATIONS:

REPOSITION LABELS ABOVE THE LISTED CONTROLS.

<<<LABELS ARE BEING PROPERLY LOCATED SO THEY WILL NOT BE OBSCURED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSJE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 86

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.11

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-71
(1.)

PANEL/WORKSTATION NO. P863-72
(1.)

PANEL/WORKSTATION NO. P863-73
(1.)

DESCRIPTION OF DISCREPANCY:

THE AUX BUILDING UNIT COOLERS SHOULD BE LABELED ABOVE THE SYSTEM

RECOMMENDATIONS:

USE HIERARCHICAL LABELING & ENCLOSE SYSTEM WITH LINES OF DEMARCATION

<<< LINES OF DEMARCATION AND HEIRARCHICAL LABELING WILL BE ADDED PRIOR TO EXCEEDING 5% POWER.

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/21/84

HED NO.: 270

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.11

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P870-55

PANEL/WORKSTATION NO. P870-56

DESCRIPTION OF DISCREPANCY:

STANDBY SERVICE WTR MULTIPEN RECORDER'S OBSCURE THE LABELS

RECOMMENDATIONS:

MOVE LABELS ABOVE RECORDERS

<<< PERMANENT LABELS HAVE BEEN ORDERED AND WILL BE INSTALLED PRIOR TO EXCEEDING 5% POWER. TEMPORARY LABELS WILL BE ADDED PRIOR TO FUEL LOAD AS AN INTERIM CORRECTIVE ACTION.

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/21/84

HED NO.: 665

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-1

PANEL/WORKSTATION NO. P680-7C

PANEL/WORKSTATION NO. P680-8C

PANEL/WORKSTATION NO. P680-9C

PANEL/WORKSTATION NO. P680-15C

DESCRIPTION OF DISCREPANCY:

LABELS, LEGEND PLATES AND ESCUTCHEONS ARE NOT USED TO IDENTIFY SYSTEM DESIGNATION

RECOMMENDATIONS:

IDENTIFY SYSTEM DESIGNATION WITH HIERARCHICAL LABELS

<<< HEIRARCHICAL LABELING WILL BE ADDED >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 423

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.3

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-4

PANEL/WORKSTATION NO. P680-5

PANEL/WORKSTATION NO. P680-6

DESCRIPTION OF DISCREPANCY:

LABELS, LEGEND PLATES, AND ESCUTCHEONS ARE NOT USED TO IDENTIFY SYSTEM DESIGNATION (SOME GROUPINGS ARE IDENTIFIED ON INSERT 5C).

RECOMMENDATIONS:

USE HIERARCHICAL LABELING TO IDENTIFY SYSTEM DESIGNATION

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 46

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.4

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:
PANELS ARE NOT LABELED BY FUNCTION AND NUMBER

RECOMMENDATIONS:
THESE PANELS ARE LABELED, BUT LABELING IS ON THE BACK OF THE PANELS. LABEL
FRONT OF PANEL IF APPROPRIATE
<<< LABELS HAVE BEEN ORDERED AND WILL BE ADDED TO THE FRONT OF THE PANELS
PRIOR TO EXCEEDING 5% POWER. THE ADDITION OF THESE LABELS DURING INITIAL
STARTUP OPERATIONS WILL NOT CAUSE OPERATOR CONFUSION >>>

ACTION:
APPROVED BY GSN MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 474

REVIEWER: BURGY/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.5

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P680-1

DESCRIPTION OF DISCREPANCY:

LABELS, LEGEND PLATES, AND ESCUTCHEONS ARE NOT CONSISTENT IN NOMENCLATURE, USE OF ACRONYMS, ABBREVIATIONS, ETC.

RECOMMENDATIONS:

CHANGE LABELS AS REQUIRED TO MATCH CONTROL ROOM DESIGN CONVENTION
<<<LABELING IS BEING CORRECTED TO BE CONSISTENT WITH ALL LABELING IN THE
CONTROL ROOM >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/29/84

HED NO.: 14

REVIEWER: BARKS/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.7

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. C61-P001
(1.)

DESCRIPTION OF DISCREPANCY:

USE OF HIERARCHICAL LABELING FOR THE RHR & RCIC COMPONENTS WOULD BE HELPFUL

RECOMMENDATIONS:

USE HIERARCHICAL LABELING WHERE POSSIBLE

<<<THIS IS THE REMOTE SHUTDOWN PANEL WHICH IS OUTSIDE THE CONTROL ROOM. THE REMOTE SHUTDOWN PANEL IS NOT A TECH. SPEC. ITEM FOR LOADING FUEL. THE OPERATORS WILL NOT BE SUBJECTED TO CHANGES IN ENHANCEMENTS DURING INITIAL STARTUP OPERATIONS BECAUSE THIS PANEL WILL NOT BE IN USE >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 83

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.7

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. GENERIC
(1.)

DESCRIPTION OF DISCREPANCY:

THERE IS NO HIERARCHICAL LABELING. LABELS ARE NOT SIZE CODED.

RECOMMENDATIONS:

USE HIERARCHICAL LABELING

<<< THIS GENERIC CHANGE WILL BE COMPLETED THROUGHOUT THE CONTROL ROOM PRIOR
TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 210

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.8

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808 (PANEL GENERIC)
(1.)

DESCRIPTION OF DISCREPANCY:

ENGRAVED METALLIC LABELS LACK DISTINCTION AND CONTRAST

RECOMMENDATIONS:

CHANGE ANY ENGRAVED LABELS THAT LACK DISTINCTION AND CONTRAST.

<<<PERMANENT LABELS HAVE BEEN ORDERED FOR THIS PANEL AND WILL BE INSTALLED
PRIOR TO EXCEEDING 5% POWER. TEMPORARY LABELS WILL BE INSTALLED PRIOR TO FUEL
LOAD AS AN INTERIM CORRECTIVE ACTION FOR LABELS LACKING DISTINCTION AND
CONTRAST >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR# SEE HED#82
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 226

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A5.9

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-83B
(1.)

DESCRIPTION OF DISCREPANCY:
LABELS UNDER CHART RECORDERS ARE OBSCURED

RECOMMENDATIONS:
PUT LABELS ON CHART RECORDER OR ABOVE
<<<PERMANENT LABELS HAVE BEEN ORDERED AND WILL BE INSTALLED PRIOR TO
EXCEEDING 5% POWER. TEMPORARY LABELS WILL BE ADDED PRIOR TO FUEL LOAD AS AN
INTERIM CORRECTIVE ACTION >>>

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 09/19/84

HED NO.: 792

REVIEWER: LINK

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: OPERATING PERSONNEL INTERVIEW

CHECKLIST NO.: B3

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P808

DESCRIPTION OF DISCREPANCY:

MULTI-PEN RECORDERS ON P808 NEED ALL SCALES INDICATED AND THOSE WHICH ARE SPARES (I.E. DRYWELL PRESS, SUPPRESSION POOL TEMPERATURE)

RECOMMENDATIONS:

LABEL ALL SCALES TO INDICATE FUNCTION.

<<<PERMANENT LABELS HAVE BEEN ORDERED AND WILL BE INSTALLED PRIOR TO EXCEEDING 5% POWER. TEMPORARY LABELS WILL BE INSTALLED PRIOR TO FUEL LOAD AS AN INTERIM CORRECTIVE ACTION >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/20/84

HED NO.: 303

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B3.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P601-16

DESCRIPTION OF DISCREPANCY:
DIESEL ENGINE STOPS ARE NOT CLEARLY MARKED

RECOMMENDATIONS:
ENHANCE STOP BUTTONS
<<< LABELING IS BEING CHANGED >>>

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 769

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: BS.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680-4D

DESCRIPTION OF DISCREPANCY:

RESET BUTTON LIGHTS - NEED LABEL TO INDICATE FUNCTION.

RECOMMENDATIONS:

ADD LABEL TO INDICATE FUNCTION

<<<LABEL IS BEING ADDED TO REFLECT CORRECT FUNCTION>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/20/84

HED NO.: 302

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B5.2

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P877-31

PANEL/WORKSTATION NO. P877-32

PANEL/WORKSTATION NO. P601-16

DESCRIPTION OF DISCREPANCY:

STANDBY GENERATOR AND DISTRIBUTION INOPERABILITY INDICATION SWITCH DOES NOT
HAVE THE BYPASS POSITION LISTED

RECOMMENDATIONS:

CHANGE LABEL.

<<< ALL INOP. INDICATION TAGS ARE BEING CHANGED TO BE CONSISTENT >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 440

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B6.1

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680-4C

(1.) P

DESCRIPTION OF DISCREPANCY:

SWITCHES FOR EMERGENCY ARE NOT CLEARLY MARKED. (INSERT 4C TRIP BUTTON B33-S001 A&B SHOULD BE RED.) (INSERT 4C-RECIRC. PUMP STOP BUTTONS B33-COOL A&B SHOULD BE RED.)

RECOMMENDATIONS:

CLEARLY DEMARCAT E EMERGENCY SWITCHES

<<< BUTTONS ARE BEING ORDERED AND WILL BE INSTALLED PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/20/84

HED NO.: 304

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C1.3

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P877-31

PANEL/WORKSTATION NO. P877-32

PANEL/WORKSTATION NO. P601-16

DESCRIPTION OF DISCREPANCY:

ANNUNCIATORS ARE NOT GROUPED SUCH THAT WARNING AND DIAGNOSTIC ALARMS ARE SEGREGATED

RECOMMENDATIONS:

ALARMS WILL BE COLOR CODED FOR PRIORITIZATION. GROUPING IS ADEQUATE.

<<< COLOR CODING OF ANNUNCIATORS WILL BE COMPLETED ON A GENERIC BASIS THROUGHOUT THE CONTROL ROOM PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 444

REVIEWER: BURGY/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C2.1

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P680-4

PANEL/WORKSTATION NO. P680-5

PANEL/WORKSTATION NO. P680-6

DESCRIPTION OF DISCREPANCY:

ALARM WINDOW IS NOT CONSISTENT IN NOMENCLATURE, USE OF ACRONYMS, ABBREVIATIONS, ETC. (INSERT 6A SRM DETECTOR RETRACTED NOT PERMITTED, SHOULD READ RETRACT.) (INSERT 4A-USE RECIRC INSTEAD OF RCIRC.)

RECOMMENDATIONS:

COMPARE TO STANDARD ABBREVIATIONS LIST AND CHANGE AS APPROPRIATE.

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 98

REVIEWER: BARKS/CHASE/SHANKLE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C2.1

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P863-72A

(1.) ANN #0579

(2.) ANN #1179

PANEL/WORKSTATION NO. P863-71A

(1.) ANN #1179

DESCRIPTION OF DISCREPANCY:

THE ABBREVIATIONS "U" AND "IFTS" ARE AMBIGUOUS

RECOMMENDATIONS:

VERIFY CONFORMANCE WITH DESIGN CONVENTIONS AND CHANGE AS REQUIRED.

<<<ABBREVIATIONS WILL BE REVIEWED ON A PANEL GENERIC BASIS. THIS PANEL WILL
BE COMPLETED PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 328

REVIEWER: SCHROEDER/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C2.2

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P863-76

DESCRIPTION OF DISCREPANCY:

LEGENDS ON ALARM WINDOWS ARE NOT CONSISTENT IN TYPE STYLE AND THE APPLICATION OF TYPE SIZE.

RECOMMENDATIONS:

MAKE ALARM WINDOWS CONSISTENT IN TYPE STYLE AND SIZE

<<< TYPE STYLE IS BEING HANDLED ON A PANEL GENERIC BASIS. THIS PANEL WILL BE COMPLETED PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

TEMPORARY LEGENDS WILL BE REPLACED TO BE CONSISTENT.

E&DCR# SEE HED#397

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/22/84

HED NO.: 289

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C2.5

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P601-19

DESCRIPTION OF DISCREPANCY:

ANNUNCIATOR FOR STANDBY LIQUID TANK/TEMP HI/LOW IS NOT SUCCINCTLY WORDED

RECOMMENDATIONS:

REMOVE "/" BETWEEN TANK AND TEMP ON ANNUNCIATOR

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR# C52,616
FDDR# LD1-2424 RO

ISSUE DATE / /
ISSUE DATE 1Q/25/84

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 329

REVIEWER: SCHROEDER/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C2.5

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P863-76

DESCRIPTION OF DISCREPANCY:

NO LABELS ARE PROVIDED ON THE INOPERABILITY MATRIX. ALSO, WINDOW LABEL FOR "STBY SERVICE WTR PUMP HOUSE X-H TEMP SWGR RM A" IS UNCLEAR.

RECOMMENDATIONS:

LABEL HAS BEEN ADDED SINCE SURVEY. CHANGE WINDOW TO BE CONSISTENT WITH STANDARD CONVENTIONS (X-H TO EXT HIGH).

<<< THE ABBREVIATIONS FOR THESE INOPERABILITY INDICATION LIGHTS WILL BE COMPLETED FOR THIS PANEL PRIOR TO EXCEEDING 5% POWER >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/22/84

HED NO.: 282

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: C2.8

CHECKLIST AREA: ANNUNCIATORS

PANEL/WORKSTATION NO. P601-19

DESCRIPTION OF DISCREPANCY:
ANNUNCIATOR A-11 "MAIN STEAM LINE HIGH RADIATION" IS NOT CODED RED IN KEEPING
WITH CONTROL ROOM CONVENTIONS

RECOMMENDATIONS:
CODE ANNUNCIATOR A-11 RED
<<< COLOR CODING OF ANNUNCIATORS WILL BE COMPLETED ON A GENERIC BASIS
THROUGHOUT THE CONTROL ROOM PRIOR TO EXCEEDING 5% POWER >>>

ACTION:
APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 5% POWER

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 237

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A1.1

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-83

PANEL/WORKSTATION NO. P808-84

DESCRIPTION OF DISCREPANCY:

SEQUENCE PROGRAMMER MANUAL CONTROLS ON 83 HAS 2 WHITE LIGHTS THE SAME CONTROL ON 84 HAS A GREEN AND A RED LIGHT

RECOMMENDATIONS:

CHANGE LIGHTS ON CONTROL TO BE WHITE & BLUE

<<<C60,566 WAS ISSUED TO ADDRESS THIS HED BUT WAS CANCELLED. THE ABOVE LISTED LIGHTS AND CONTROLLERS HAVE BEEN DELETED PER CF-318(FDDR-1707 RO). NO FURTHER ACTION REQUIRED>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#
FDDR#

ISSUE DATE / /
ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD

RIVER BEND NUCLEAR PLANT

DATE: 02/24/84

HED NO.: 223

REVIEWER: LIDDLE/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.2

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P808-83C

(1.)

DESCRIPTION OF DISCREPANCY:

CONTAINMENT SAMPLE, DRYWELL SAMPLE, H2 MOISTURE ANALYZER CONTROLS ARE NOT IN ALPHABETICAL TOP TO BOTTOM ORDER

RECOMMENDATIONS:

REARRANGEMENT OF SWITCHES WILL NOT IMPROVE OPERABILITY. SIMULATOR TRAINING WILL FAMILIARIZE OPERATORS WITH CONTROLS.

<<<THE CONTROLS ARE ARRANGED TOP TO BOTTOM IN THE SAME ORDER THAT THEY ARE ARRANGED IN THE CONTAINMENT. THIS IS THE DESIRED ARRANGEMENT. THERE ARE TWO CONTROLS THAT ARE NOT ARRANGED LIKE THE PLANT AND THEY ARE BEING MOVED PER E&DCR 60,893 >>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE:

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/27/84

HED NO.: 319

REVIEWER: SCHROEDER/MATSON/BISHOP

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: A3.7

CHECKLIST AREA: PANEL LAYOUT AND DESIGN

PANEL/WORKSTATION NO. P863-76

DESCRIPTION OF DISCREPANCY:

THE <<<TURBINE BUILDING>>> CHILLED WATER CONTROLS SHOULD BE LOCATED CLOSER TO THEIR RELATED H&V CONTROLS AT P863-71C.

RECOMMENDATIONS:

CHILLED WATER CONTROLS ARE APPROPRIATELY GROUPED. OPERATOR TRAINING WILL FAMILIARIZE THEM WITH LOCATION OF CONTROLS.

<<<DUE TO SPACE CONSTRAINTS, THESE CONTROLS CAN NOT BE MOVED TO ANOTHER INSERT IN THIS PANEL. THEY ARE LOCATED ON A VERTICAL INSERT WHICH IS CONSISTENT WITH OTHER CHILLED WATER CONTROLS. THE MIMIC AND SYMBOLS WILL BE UPGRADED TO SHOW

THE RELATIONSHIP WITH THE CONTAINMENT COOLERS PRIOR TO EXCEEDING 5% POWER. THE DISTANCE BETWEEN THE CHILLED WATER CONTROLS AND TURBINE BLDG COOLERS IS 18 FEET.

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO EXCEEDING 3% POWER

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 02/23/84

HED NO.: 439

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.: B5.11

CHECKLIST AREA: INSTRUMENTATION AND HARDWARE

PANEL/WORKSTATION NO. P680-4

PANEL/WORKSTATION NO. P680-5

PANEL/WORKSTATION NO. P680-6

DESCRIPTION OF DISCREPANCY:

HANDLES OR KNOBS ARE NOT SHAPED SO AS TO CLEARLY INDICATE POSITION WITHOUT OBSTRUCTION OF LEGENDS OR CONFUSION OF DIRECTION. (MANUAL SCRAM BUTTONS NEED BETTER INDICATION OF POSITION.)

RECOMMENDATIONS:

<<<MARK>>> SWITCH COLLAR TO INDICATE FUNCTION.

<<<C52,617 WAS GENERATED TO CORRECT THIS HED BUT WAS CANCELLED. GSU SHALL HANDLE THIS CHANGE WITH AN RCF. IN ADDITION, THERE IS AN ANNUNCIATOR ASSOCIATED WITH THE SWITCH COLLAR POSITION (MANUAL SCRAM PUSHBUTTON ARMED >>>

ACTION:

APPROVED BY GSU MANAGEMENT

E&DCR#

FDDR#

ISSUE DATE / /

ISSUE DATE / /

CRITICALITY RATING: 2

IMPLEMENTATION SCHEDULE: PRIOR TO FUEL LOAD

APPENDIX H

DCRDR SUMMARY REPORT HEDs
WITH IMPLEMENTATION SCHEDULE CHANGES

HUMAN ENGINEERING DISCREPANCY RECORD
RIVER BEND NUCLEAR PLANT

DATE: 03/22/84

HED NO.: 381

REVIEWER: BURG/CHASE

TRACKING STATUS: SCHEDULE PHASE

DATA SOURCE: BWR OWNERS GROUP

CHECKLIST NO.:

PANEL/WORKSTATION NO. GENERIC

DESCRIPTION OF DISCREPANCY:

THERE IS NO CONTAINMENT ISOLATION MIMIC SHOWING THE STATUS OF THE PENETRATIONS

RECOMMENDATIONS:

ADD CONTAINMENT ISOLATION STATUS DISPLAY ON SPDS

<<< PARAMETERS HAVE BEEN ESTABLISHED. GSU TECH STAFF IS DEVELOPING SOFTWARE (REFERENCE SCRB-6131 DATED 02/11/85). THE REQUIRED CONTAINMENT ISOLATION STATUS INDICATIONS ARE PRESENT IN THE CONTROL ROOM ON THE BENCHBOARDS. THE SPDS WILL ONLY COMPLEMENT THESE INDICATIONS. THE SPDS WILL BE FULLY FUNCTIONAL BY FEBRUARY 1986.>>>

ACTION:

APPROVED BY GSU MANAGEMENT.

E&DCR#

ISSUE DATE / /

FDDR#

ISSUE DATE / /

CRITICALITY RATING: 1

IMPLEMENTATION SCHEDULE: