Addendum 4

Control Room Design Review

Human Engineering Discrepancy Resolution Report

SOUTH TEXAS PROJECT
ELECTRIC GENERATING
STATION

HOUSTON LIGHTING & POWER COMPANY

HED RESOLUTION REPORT

REVISION LOG

Revision No.	Date	Description	Pages Affected
0	04/15/85	Initial Issue	
1	08/12/85	General Revision	i, vii, 2-4, 2-5, A-2, A-5, A-6, A-8, A-9, A-10, A-11, A-12, B-3, B-4, B-5, B-8, B-9, B-18, B-19, B-25, B-29, D-5, D-6
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Addendum No. 4	12/01/89	Complete Revision of Addendum No. 3	N/A

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ACRONYMS AND ABBREVIATIONS

AFW	Auxiliary Feedwater
ASP	Auxiliary Shutdown Panel
ATWS	Anticipated Transient Without Scram
BAT	Boric Acid Tank
CCW	Component Cooling Water
Cont	Control, Controller
CR	Control Room
CRDR	Control Room Design Review
CRS	Control Room Survey
CRT	Cathode Ray Tube
CSF	Critical Safety Function
CVI	Containment Ventilation Isolation
dB(A)	Decibels (A-Scale)
DC	Direct Current
EAB	Electrical Auxiliary Building
ECW	Essential Cooling Water
EOP	Emergency Operating Procedure(s)
ERFDADS	Emergency Response Facilities Data Acquisition and Display System (SPDS is a portion of ERFDADS)
ESF	Engineered Safety Features
ESFAS	Engineered Safety Features Actuation System
FW	Feedwater
GPM	Gallons per Minute
HED	Human Engineering Discrepancy
HF	Human Factors
HL&P	Houston Lighting & Power Company
HVAC	Heating, Ventilation, and Air Conditioning
HX	Heat Exchanger
IR	Intermediate Range
kV	Kilovolt
LCO	Limiting Condition for Operation
LOOP	Loss of Offsite Power
MCC	Motor Control Center
MCO	Main Construction Office
MG	Motor Generator
MVAR	Megavar
MSR	Moisture Separator Reheater
NI	Nuclear Instrumentation
NIS	Nuclear Instrumentation System
NRC	Nuclear Regulatory Commission

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ACRONYMS AND ABBREVIATIONS
(Continued)

NSF	Normal Safety Function
OER	Operating Experience Review
P&ID	Piping and Instrumentation Diagram
PORV	Power-Operated Relief Valve
PR	Power Range
Proteus	Plant Computer
QDPS	Qualified Display Processing System
RCB	Reactor Containment Building
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RWST	Refueling Water Storage Tank
SFTA	System Function and Task Analysis
SG	Steam Generator
SGFP	Steam Generator Feed Pump
SI	Safety Injection
SIS	Safety Injection System
SPDS	Safety Parameter Display System
SR	Source Range
STP	South Texas Project
V	Volt
V&V	Verification and Validation
VCT	Volume Control Tank

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SUMMARY

This addendum to the HED Resolution Report summarizes the results of the resolution of Category A, B, C, and D human engineering discrepancies (HEDs) in response to human engineering observations generated as a result of the following activities:

a. The Emergency Operating Procedures (EOP) validation

b. The disposition of HEDs that were not complete at the time of the initial HED Resolution Report

c. The evaluation of Category E HEDs

d. Miscellaneous CRDR human factors work

e. Dispositions where it was determined that revision, clarification, or additional information was necessary

f. The SPDS Man-in-the-Loop Validation

The EOP validation was performed at the South Texas Project simulator, located in the training facility, during May 1986. This effort and the results are described in the EOP Validation Report.

Disposition of HEDs not complete at the time of the initial HED Resolution Report (dated April 15, 1985, as revised August 12, 1985) and evaluation of nearly all of the Category E HEDs have been performed. Various other remaining CRDR tasks, as shown in the Executive Summary and its addenda, have

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also been completed. Disposition of the HEDs resulting from these evaluations and tasks is included in this addendum.

HEDs are also identified by project operations, engineering, and startup personnel. Disposition of HEDs identified through this avenue is included in this addendum.

The SPDS Man-in-the-Loop Validation was performed at the South Texas Proje[illegible] simulator during November 1987. Disposition of HEDs developed during this effort is included in this addendum.

This addendum summarizes the disposition of HEDs open at the time of the initial HED Resolution Report and those HEDs developed after that report. Addendum 4 supersedes Addendum 3 in its entirety.

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PREFACE

The control room design review (CRDR) of the South Texas Project (STP) Electric Generating Station was started in September 1982. This review was performed by Torrey Pines Technology for Houston Lighting & Power Company (HL&P) with Bechtel Energy Corporation (Bechtel) acting as agent.

The program plan was presented to the NRC at the STP main control panel mock-up in October 1982. The basic review work for operator experience review, system function and task analysis, and control room survey was completed in October 1982. In November 1982, the Management Team put a hold on CRDR activities, and authorized a design study to address mounting evolutionary engineering changes and correct discrepancies with the NUREG-0700 guidelines.

In November 1982, a decision was made by HL&P to completely relayout six main control panels and upgrade the remaining four based on the design study. This redesign effort was required to accommodate design changes resulting from plant design evolution and Regulatory Guide 1.97 requirements and to correct discrepancies with NUREG-0700. In December 1982 the Management Team selected one of five alternatives studied for design implementation.

The mock-up was revised considering the 441 identified HEDs and evolutionary engineering changes. As the Bechtel layout engineers advanced the layouts of the ten panels, Torrey Pines Technology engineers reviewed the rework for correction of known discrepancies and compliance with good human factors principles. The redesign effort on the main control panels was completed in April 1983. The NRC performed an in-progress audit in May 1983, after which the panel vendor was provided with firm layout drawings.

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The NRC audit comments required the addition of several special studies to those already in progress, e.g., demarcation and hierarchical labeling. The most significant addition, the evaluation of specified parameters, resulted in a net reduction of 51 panel meters. The extensive relayout required a repeat of the system function and task analysis with verification and walk-through/talk-through validation. Likewise, a specially structured control room review and human factors review of the corrective measures for all Category A and representative Category B discrepancies were performed. The demarcation and hierarchical labeling studies resulted in continued upgrading of the mock-up. The completion of the panel relayout allowed the design of the annunciator system consistent with the relocations of many systems and subsystems, and a reduction of active windows from 1055 to 642.

Following the completion of these major efforts, HL&P has continued the CRDR program, including resolution of human engineering deficiencies identified, using Bechtel and Torrey Pines Technology as required.

The documentation for this program was necessarily extensive in view of its design development nature. Documentation describing the work performed during the CRDR is summarized below and in Figure P-1:

1. Program Plan - Defines the initial plan for performing the CRDR during the plant's construction phase.

2. Criteria Report - Provides the detailed guidelines and basis for the CRDR and describes the interface between the control room and plant systems. This report also includes review procedures, plant conventions, and human factors data developed during the CRDR that will facilitate future control room modifications.

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3. Operating Experience Review (OER) Report - Describes the operations personnel review process, results, conclusions, and recommendations of this task defined in the Program Plan.

4. System Function and Task Analysis (SFTA) Report - Describes the methodology, results, conclusions, and recommendations for this SFTA effort defined in the Program Plan.

5. Control Room Survey (CRS) Report - Describes the review process, results, conclusions, and recommendations of this task defined in the Program Plan. This report also includes the final results and dispositions for the human factors observations obtained from the OER and the SFTA.

6. Annunciator Report - De cribes the review process, results, conclusions, and recommendations of the annunciator review task defined in the Program Plan and the annunciator study guide.

7. Special Studies Report - Describes details of miscellaneous studies performed as part of the CRDR. This includes the anthropometric study, the hierarchical labeling study, the demarcation study, evaluation of specified parameters, and many minor studies to resolve NRC audit comments.

8. Implementation Plan Report - Summarizes the control panel design changes resulting from the implementation of Regulatory Guide 1.97 requirements, engineering design requirements, and preliminary observations of the CRDR design review team. It describes the reasons for major changes to the control panel layouts.

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9. SFTA Validation Report - Summarizes the second review required because of the extensive revisions made to the control panel layouts and also includes walk-through/talk-through exercises performed in the mock-up area.

10. OER Validation Report - Summarizes the review made by operators to determine if the redesigned panels corrected reported operator concerns and evaluate if any new problems were created as a result of the corrective measures taken.

11. CRS Validation Report - Summarizes the review made to determine if the Category A and representative samples of the Category B HEDs were satisfactorily corrected and if any new problems were created.

12. Executive Summary - Summarizes the CRDR results, conclusions, recommendations, and schedules for remaining work. Technical details are in the Operating Experience Review Report, the System Function and Task Analysis Report, the Annunciator Report, the Control Room Survey Report, the Special Studies Report, the Implementation Plan Report, and various validation reports.

13. Human Engineering Discrepancy Resolution Report - Summarizes all Category A, B, C, and D HED resolutions (as of January 1, 1986).

14. Executive Summary Addenda - Summarize the results and remaining work schedules of the CRDR program following the submittal of the Executive Summary Report. Addendum 1 showed progress as of April 15, 1985; Addendum 2 as of December 22, 1986; Addendum 3 as of

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November 23, 1987; and Addendum 4 as of September 30, 1988. Addendum 5 shows progress as of December 1, 1989.

15. Emergency Operating Procedures (EOP) Validation Report - Summarizes the validation process used for the Emergency Operating Procedures and the results as they involve the control panels. This validation was conducted at the STP simulator during May 1986 using the draft EOPs.

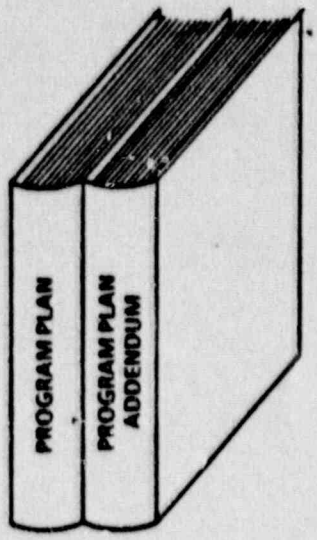
16. Human Engineering Discrepancy Resolution Report Addenda - Summarize resolutions for Category A, B, C, and D HEDs identified after January 1, 1986. Addendum 1 summarized the HED resolutions as of December 22, 1986; Addendum 2 as of November 23, 1987; and Addendum 3 as of September 30, 1988. Addendum 4 summarizes the HED resolutions as of December 1, 1989. For clarity, each addendum shows resolutions for HEDs identified after January 1, 1986, thus superseding the previous addendum in its entirety.

17. Program Plan Addendum - Identifies the STP CRDR Program Plan effective for the plant's operational phase.

HOUSTON LIGHTING & POWER CO.

CONTROL ROOM DESIGN REVIEW

PLANNING



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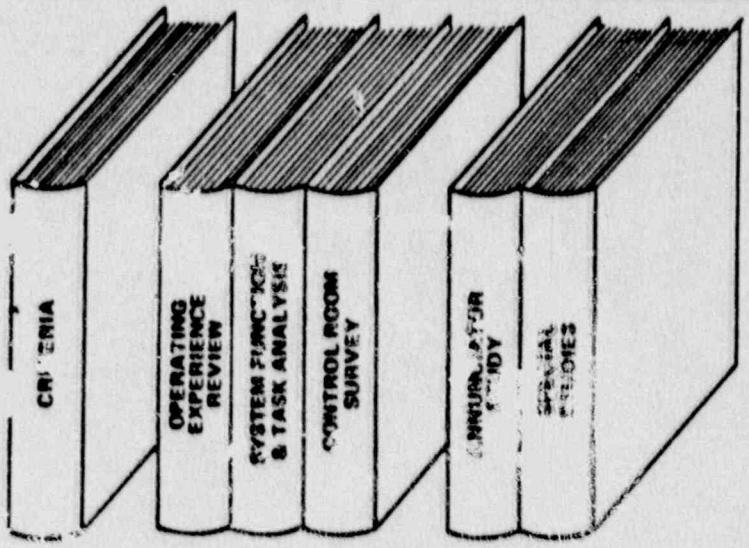

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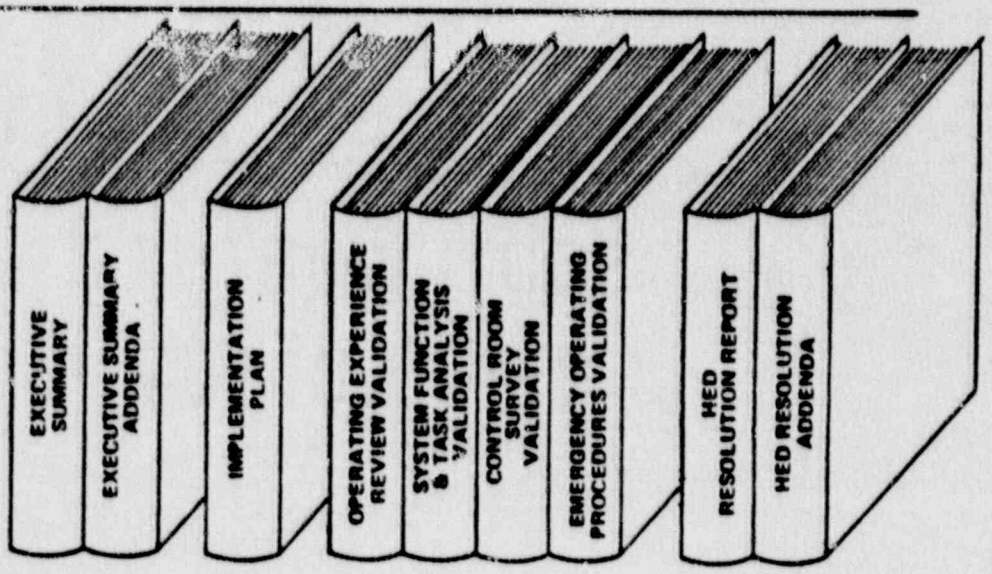

STP CRDR MAJOR REPORTS
Figure P-1

HED RESOLUTION REPORT

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1.0 INTRODUCTION

1.1 GENERAL COMMENTS

The initial Human Engineering Discrepancy Resolution Report was prepared to provide in one document a summary of the HEDs and their resolutions, as approved by the Project Review Team and Management Team involved in the CRDR of the South Texas Project. This addendum addresses the HEDs not complete at the time of the initial HED Resolution Report and those developed as a result of CRDR activities since that time. This addendum is prepared in a manner to be consistent with the initial HED Resolution Report.

1.2 OBJECTIVE

The purpose of this addendum is to provide a structured reporting method for summarizing the resolutions of HEDs not completely resolved in the initial HED Resolution Report and HEDs developed subsequent to that report in the continuing program to apply human factors principles to the design of the control room.

1.3 METHOD OF REPORTING RESOLUTIONS

The Category A, B, C, and D HEDs and resolutions addressed by this addendum are shown in Section 2.

The schedules for completion of ongoing or remaining CRDR activities are provided in the Executive Summary Report Addenda, Section 5.0, Schedule.

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2.0 LISTING OF HED RESOLUTIONS

The HED resolution sheets are organized by category (A, B, C, and D) and each category is subdivided according to the NUREG-0700 Section 6 topics as follows:

Workspace
Communications
Annunciator
Controls
Visual Displays
Labels and Location Aids
Computers
Panel Layout
Control/Display Integration

Renumbering of some HEDs occurred in HED Resolution Report Addendum 2, differing from Addendum 1 and the EOP Validation Report. This renumbering was done to facilitate use of a single number (i.e., the HED number) instead of multiple sheet numbers to reference a single finding.

For ease in locating a particular HED, Tables 2-1 and 2-2 have been provided, listing respectively the HEDs identified since the initial HED Resolution Report and the HEDs identified in the initial HED Resolution Report for which additional information is provided herein. Revision bars are not shown in these tables where only the page number has changed.

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Disposition notes are provided when several HEDs can be more effectively addressed in one location, and are shown beginning on pages 2-3 for the Qualified Display Processing System.

HF AREA Computers HED CATEGORY N/A

NOTE NO.	DISPOSITION
CPT-1	The Qualified Display Processing System (QDPS) is a microprocessor-based system designed to perform several safety-related functions, as follows: 1. Data acquisition, processing, and qualified display for post-accident monitoring 2. Data acquisition, display, and analog control for safe shutdown to address separation/isolation concerns for a postulated control room/relay room fire 3. Data acquisition and digital processing of steam generator narrow range water level signals and primary coolant system hot leg temperature signals for transmission to the protection system and for display 4. Safety grade control (and position indication, as required) of several safety related valves Design changes and resolutions to human engineering observations have been identified that involve modifications to the QDPS. Because the QDPS is microprocessor-based, these modifications involve software changes; these software changes require completion of a comprehensive verification and validation (V&V) effort. The schedule for these design changes is discussed in the Executive Summary Addenda, Section 5.0, Item 22. Discussions of each HED resolution are provided below.

HF AREA Computers HED CATEGORY N/A

NOTE NO.	DISPOSITION
HED-1022 (Cat. C)	The QDPS displays will be revised to consistently refer to steam line pressure as "SG PRESS", to use the correct abbreviation for "estimated", and to delete "cc" from the cubicle cooler representation on the display.
HED-1027 (Cat. C)	Two minor inconsistencies (incorrect PORV label, incorrect abbreviation) will be corrected at a later date.
HED-1041 (Cat. B)	QDPS displays of tank levels which are Tech Spec parameters will be revised to display the levels in gallons, rather than percent, when the Tech Spec requirement is in gallons. This change will allow direct comparison of the Tech Spec requirement and the actual tank level. Information has been issued to the Operations and Training Departments giving the conversion from percent to gallons for each tank, allowing use of QDPS to verify compliance with the Tech Spec. This information has been included in the operator requalification program.
HED-1126 Cat. C)	Operator action points on the QDPS CSF displays will be revised to be consistent with the modifications being made on the SPDS CSF displays. These changes will result in all operator action points on the QDPS CSF displays having arrows and dashed lines, with numerical values corresponding to the status trees.

TABLE 2-1

HEDs IDENTIFIED SINCE INITIAL HED RESOLUTION REPORT

Number	Page	Title
HED-1001	D-15	Switch Action After "Quick-Release"
HED-1002	B-18	Control Switch Action on Transfer Switch Panel
HED-1003	B-19	Standby Diesel Generator Emergency Stop Capability
HED-1004	A-2	Feedback for CCW Flow to Reactor Coolant Pumps
HED-1005	A-19	Safety Injection System Layout - Train/Subsystem Differentiation
HED-1006	A-10	CCW/ECW Pump Labeling Similarity
HED-1007	A-11	Labels and Mimic for CCW System
HED-1008	A-12	Load Center Switches Used for ATWS Response
HED-1009	A-6	Misleading Indication of Power Available to ESF Buses
HED-1010	A-3	First-Out Windows Unreadable
HED-1011	A-4	Inadvertent Actuation of Annunciator Test Pushbutton
HED-1012	B-56	Demarcation Color Pads for Panel CP010 Power Feeds to ESF Buses on Panel CP003
HED-1013	B-23	Reactor Coolant Pump Seal Flow Recorder Scales
HED-1014	B-57	Recorder Pen Sequence Reversed From Indicator Sequence
HED-1015	C-17	Feedback for Status of Reactor Makeup System
HED-1016	B-37	Parallel Mimic Lines on Panel CP010
HED-1017	C-24	Incorrect Reflection of Charging Pump Valves on Panel CP004
HED-1018	C-18	Feedback for ESF Actuation Signal Reset
HED-1019	C-25	ESF Signal Block Switch Labeling
HED-1020	C-26	SI Power Lockout Switch Labeling

TABLE 2-1 (Continued)

HEDs IDENTIFIED SINCE INITIAL HED RESOLUTION REPORT

Number	Page	Title
HED-1021	C-27	SI Reset Switch Labeling
HED-1022	C-38	QDPS/ERFDADS Display Abbreviations - Display Revisions
HED-1023	C-39	QDPS Display Abbreviations - Criteria Revisions
HED-1024	C-40	Zero/Low Flow Indications on QDPS
HED-1025	C-19	Inconsistent Position Indication for QDPS-Controlled Valves
HED-1026	B-46	NIS Displays on QDPS and ERFDADS
HED-1027	C-41	QDPS/ERFDADS Display Inconsistencies
HED-1028	D-19	Third Pen Visibility on Three-Pen Recorders
HED-1029	D-2	Controls Above 70 Inches
HED-1030	B-2	Glare from Meters
HED-1031	C-15	Legend Pushbutton Label Inconsistencies
HED-1032	C-20	Steam and Feedwater Headers - Differential Pressure Determination
HED-1033	B-47	Proteus and ERFDADS Use of Colors
HED-1034	D-26	ERFDADS Normal and Critical Safety Function Designators on Displays
HED-1035	D-27	ERFDADS Keys - Differentiation of "Shifted" and "Unshifted" Functions
HED-1036	C-42	Abbreviations on Computer Displays
HED-1037	B-48	Glare on Computer CRTs
HED-1038	C-43	Plant Computer Color Quality and Menu Listing Order
HED-1039	D-28	Use of Periods on Computer Displays
HED-1040	C-44	ERFDADS/Plant Computer Labeling and Colors

TABLE 2-1 (Continued)

HEDs IDENTIFIED SINCE INITIAL HED RESOLUTION REPORT

Number	Page	Title
HED-1041	B-49	Tech Spec Level Presentation Inconsistencies
HED-1042	B-50	Proteus Display Error
HED-1043	C-67	Cross-Loop Comparison of RCS Temperatures (T_{avg}, T_h, T_c, Delta-T)
HED-1044	B-59	VCT Pressure and Level Meters Differentiation
HED-1045	A-13	Demarcation Inadequate for SG Level Meters and PORV Controls
HED-1046	B-38	Labels Inconsistent with Meters Identified
HED-1047	B-51	ERFDADS Unit Overwritten by Data Quality Character
HED-1048	B-52	ERFDADS Display Errors on Valve Status
HED-1049	B-53	ERFDADS Display Error on RHR Flow Range
HED-1050	B-54	Radiation Monitoring Information Not Datalinked to ERFDADS
HED-1051	B-7	Bypass/Inoperable Indication - Phase A Isolation
HED-1052	B-8	Bypass/Inoperable Indication - Main Steam Isolation
HED-1053	B-9	Bypass/Inoperable Indication - Safety Injection
HED-1054	B-10	Bypass/Inoperable Indication - RHR Heat Exchanger Valves
HED-1055	C-8	Abbreviations on ESF Status Monitoring System
HED-1056	C-9	Inconsistent/Incorrect Labels on ESF Status Monitoring System
HED-1057	C-28	Labeling of AFW Pump Turbine Trip Pushbutton
HED-1058	C-29	Inconsistent Recorder Labels and Pen Labels for RCS Temperature
HED-1059	B-55	ERFDADS Display Error on Valve Numbers

TABLE 2-1 (Continued)

HEDs IDENTIFIED SINCE INITIAL HED RESOLUTION REPORT

Number	Page	Title
HED-1060	C-2	Air Velocities Above Limits
HED-1061	B-3	Lighting Levels Outside Requirements
HED-1062	B-4	Inadequate Illumination Levels (Emergency Lighting)
HED-1063	B-5	Control Room Noise Levels
HED-1064	C-45	ERFDADS Transfer Switch Position Descriptions
HED-1065	C-46	ERFDADS and QDPS Displayed Values Differences
HED-1066	B-11	Status Monitoring Not Provided After a LOOP
HED-1067	B-12	Status Monitoring Alarms After LOOP for Components Not Actuated
HED-1068	C-10	Seismic Monitoring Annunciation
HED-1069	D-29	Color Meanings in Trend Graphs on ERFDADS
HED-1070	C-47	SPDS Status Box Color Differentiation
HED-1071	D-30	SPDS Keys - Differentiation on ERFDADS Keyboards
HED-1072	C-48	SPDS CSF Displays - No Color Changes for Alarm Conditions
HED-1073	D-31	Cooling Coil and Heating Coil Symbols on Computer Displays
HED-1074	D-32	Data Presentation Order Difference Between QDPS and ERFDADS
HED-1075	C-49	AFW Flow Offscale High Indication
HED-1076	D-20	Tech Spec Flow Value Readability on Meter Scale
HED-1077	C-30	Demarcation/Labeling on HVAC Panel CP022
HED-1078	C-31	Labels for Power Source Identification
HED-1079	B-20	Color Coding of Pushbuttons and Switches

TABLE 2-1 (Continued)

HEDs IDENTIFIED SINCE INITIAL HED RESOLUTION REPORT

Number	Page	Title
HED-1080	C-32	Open/Close Indication For RCS Purification Flow Controller
HED-1081	B-13	Annunciator and ESF Status Monitoring Lampbox Labels
HED-1082	C-50	ERFDADS Inputs for ESF Actuation Signal Alarms Incomplete
HED-1083	C-16	Inadvertent Actuation of Communications Console Switches
HED-1084	C-7	Backup Power for Telephone Equipment
HED-1085	D-12	Maintenance Communication System Jack Patch Panel Labeling
HED-1086	C-3	Procedures for Emergency Equipment Use
HED-1087	C-4	Labeling of Storage Areas for Emergency Equipment
HED-1088	D-3	Control Room Noise Level
HED-1089	C-11	Bypass/Inoperable Status Alarm for Normal Purge Containment Isolation Valves
HED-1090	D-16	Improper Color Coding of Switches on Panel CP010
HED-1091	D-23	Process Mimic Color-Coded by Train
HED-1092	D-14	Temporary Identification on Annunciator Windows Actuated by ERFDADS
HED-1093	D-17	Bypass/Inoperable Status Manual Pushbuttons - Differentiation from Indicating Lights
HED-1094	C-51	Ranges for ECW Flow on QDPS and ERFDADS Displays
HED-1095	A-14	Displayed Operator Action Points Inconsistent with EOPs
HED-1096	B-14	ESF Status Monitoring for Phase B Isolation
HED-1097	C-52	ERFDADS Keyboard CRT Select Key Engraving

TABLE 2-1 (Continued)

HEDs IDENTIFIED SINCE INITIAL HED RESOLUTION REPORT

Number	Page	Title
HED-1098	B-24	Condenser Vacuum Indication
HED-1099	B-16	Common Alarms Not Provided in Unit 2
HED-1100	D-24	ESF Status Monitoring System Test Pushbutton Demarcation Pad/Labeling
HED-1101	B-39	Labels for SI Actuation Switches
HED-1102	B-40	"AFW Actuate" Usage
HED-1103	C-21	Engineering Units Designations for Recorders
HED-1104	D-21	RCS Pressure Recorder Reading Comparison
HED-1105	C-33	Train-Related Color Coded Mimics
HED-1106	D-33	ERFDADS Display CV-02
HED-1107	D-40	Power Range Low Setpoint Trip Block Pushbuttons
HED-1108	A-15	SPDS Plant Status Monitoring during Adverse Containment Conditions
HED-1109	C-53	SPDS Monitoring of ATWS Conditions
HED-1110	D-34	SPDS Cursor Visibility on Trend Plots
HED-1111	C-54	SPDS Top Level Display Bar Height
HED-1112	C-55	EOP Parameter Label vs. SPDS Label
HED-1113	D-35	SPDS Scale Legends on NSF-Z Display
HED-1114	D-36	SPDS NSF Digital Values not Provided
HED-1115	C-56	SPDS Microcurie Abbreviation
HED-1116	C-57	SPDS NSF to CSF Changes on Reactor Trip
HED-1117	C-58	SPDS CSF-P Display Spacing
HED-1118	C-59	SPDS Subcooling "+/-" Conventions

TABLE 2-1 (Continued)

HEDs IDENTIFIED SINCE INITIAL HED RESOLUTION REPORT

Number	Page	Title
HED-1119	C-60	SPDS Alarm Acknowledgment Difficult
HED-1120	C-61	SPDS Complexity
HED-1121	C-62	SPDS Alarm Colors Inconsistent
HED-1122	D-37	SPDS "Breaker" Acronym
HED-1123	D-38	SPDS Colors for Alarms and Trends
HED-1124	C-63	SPDS NSF-Z INOP Flags With Insufficient Labeling
HED-1125	C-64	SPDS NSF-Z Background Label Confusion
HED-1126	C-65	CSF Operator Action Points Designations Inconsistent
HED-1127	C-66	SPDS NSF-S Layout/Labeling of NIS Readings
HED-1128	B-25	Labeling for Steam Dump Rototellite Lights
HED-1129	C-12	Lampbox Windows for AFW Pump Start Blocked
HED-1130	C-34	Reset Pushbutton Escutcheon Engravings
HED-1131	B-41	Turbine Bearing Water Spray Valve Labels
HED-1132	B-26	Delta-I Recorder Scale and Paper
HED-1133	C-35	Labels and Locations of Switches for SI Check Valve Test Valves
HED-1134	A-17	SI Termination/Reinitiation Criteria vs QDPS/ERFDADS Displays
HED-1135	B-17	QDPS Alarm Window Priorities
HED-1136	D-39	ERFDADS Radiation Monitor Units on Displays
HED-1137	D-25	Main Generator MVAR Meter Scale
HED-1138	B-60	SG Level Indicator and Control Switch Inconsistency
HED-1139	C-22	Containment Moisture Indicator

TABLE 2-1 (Continued)

HEDs IDENTIFIED SINCE INITIAL HED RESOLUTION REPORT

Number	Page	Title
HED-1140	C-13	Nuisance Alarms on AFW Pump Discharge Pressure
HED-1141	C-14	Inappropriate Bypass/Inop Indication for Class 1E Battery Chargers
HED-1142	C-68	Valve Position Light Arrangement for MSR Main Steam Purge Valves
HED-1143	C-5	Emergency Lighting Levels Outside Requirements
HED-1144	D-18	Small Finger-Operated Controls Difficult to Hold "Actuated" for Slow Stroke Time Valves
HED-1145	C-36	Inadequate Labeling for Jog-controlled Valves
HED-1146	D-4	ASP Controls Located Above 53 Inches
HED-1147	D-5	ASP Displays Located Above 65 Inches or Below 50 Inches
HED-1148	D-6	Access to Documents for ASP Operation
HED-1149	D-7	Expendables Not Provided in ASP Room
HED-1150	B-6	Fluorescent Lights in CR Result in Glare
HED-1151	D-8	Air Velocities Above Limits in Unit 1 ASP
HED-1152	D-9	Direct Overhead Lighting in ASP Room
HED-1153	D-10	Glare on ASP Meters
HED-1154	D-22	Scale Graduation Dimensions on ASP Meters
HED-1155	D-13	Location of Communications Box in Unit 1 ASP Room
HED-1156	C-6	Annunciator Procedure Binders and Access to Panels
HED-1157	D-11	Background Noise Level at ASP
HED-1158	B-58	ASP RHR Controller/Meter Layout and Labeling

TABLE 2-1 (Continued)

HEDs IDENTIFIED SINCE INITIAL HED RESOLUTION REPORT

Number	Page	Title
HED-1159	B-42	ASP Controller Labeling for CR/ASP Control Transfer Pushbuttons
HED-1160	C-37	Transfer Switch/Control Switch Association on Transfer Switch Panels
HED-1161	B-43	ASP Lights for RHR System Not Labeled

TABLE 2-2

HEDs IDENTIFIED IN INITIAL HED RESOLUTION REPORT

TITLE	NUMBER	PAGE
Annunciator Horns	S-510	A-5
Rototellite Lights	S-367, 484, 679, 725, 748	A-8
Legend Pushbutton Distinguishability from Legend Lights	S-703	B-21
Knurled or J-Handle Switches	S-711, 734, 695, 705, 699, 459	B-22
Meter Zone Markings	S-006, 288, 676, 299, 310, 764, 787, 480, 364, 060, 912, 961, 998	B-27
Intermediate Graduation Marks for Scales	S-671, 743, 650, 782, 360, 392	B-28
Parameters Not Immediately Usable from Meters	S-716, 666, 739, 776, 470	B-29
Abbreviations on Meter Faces	S-718, 668, 741, 757, 778, 471, 404, 406	B-30
Number of Graduations Between Scale Markings	S-719, 670, 742, 649, 759, 781, 475, 359, 334, 329	B-31

TABLE 2-2 (Continued)

HEDs IDENTIFIED IN INITIAL HED RESOLUTION REPORT

TITLE	NUMBER	PAGE
Distinguishability of Intermediate and Minor Graduations on Scales	S-720, 672, 744, 651, 760, 783, 476, 361	B-32
Vertical Meter Pointers - Black vs. Red	S-724, 675, 747, 655, 763, 786, 479, 408, 911, 960, 997	B-33
Incompatible Scales for Parameters Which Must be Compared	S-871, 885	B-34
Inappropriate Ranges on Meters	S-877, 880, 882, 872, 873, 884, 800, 804, 808	B-35
Scales Inconsistent with Degree of Readability Required	S-878, 879, 881, 870, 874, 883, 799, 803, 807, 892	B-36
Lettering Size on Labels	S-584, 216, 692, 637, 615, 626, 449, 437, 345, 342	B-44
Stroke Width-to-Character Height Ratio and Engraving Inconsistencies on Labels	S-591, 693, 602, 639, 618, 630, 447, 440, 343, 346	B-45

CATEGORY A HED DISPOSITIONS

HF AREA Annunciator HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1004 P_1-6.3.1.2 P_2-8.1	There is no direct feedback for component cooling water flow to the reactor coolant pump thermal barriers. High flow is determined by means of a high flow switch. Normal flow can only be determined indirectly by a time consuming process of checking status of numerous valves and operation of a CCW pump. REF: EOP VALIDATION REPORT APPENDIX A	The high flow switch has been replaced with a high/low flow switch. The annunciator and computer provide the CCW low flow alarms to the operator. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1010 P_1-6.3.3.5 P_2-8.6.11	The "first-out" windows are unreadable when lit because the letters are white on a red window and tend to wash out. REF: EOP VALIDATION REPORT APPENDIX A	The coloring of the "first-out" annunciator windows has been changed to white with black letters. (The red border around the "first-out" group of windows was retained.) Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1011 P_1-6.3.4.2 P_2-8.4.3.D	The annunciator "TEST" push pushbutton was inadvertently depressed several times while actually trying to "SILENCE" or "RESET" the annunciator. REF: EOP VALIDATION REPORT APPENDIX A	A guard has been installed over each annunciator system "TEST" pushbutton to differentiate it from the "SILENCE", "ACKNOWLEDGE", and "RESET" pushbuttons and to prevent inadvertent activation of the system test. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-510 P_1-6.3.2.1 P_2-8.4.1	Original annunciator design provides for only one DC buzzer. REF: INITIAL HED RESOLUTION REPORT PAGE A-2	To correct this discrepancy, six horns have been installed in the control room. A human factors evaluation during December 1986 has determined that the installation of audible devices meets the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1009 P_1-6.5.3.2 P_2-App. H H.1	The blue "Power Available" lights on CP003 indicate motor operated disconnect switch position and not the Engineered Safety Features (ESF) 4160V bus voltage. This gives false indication that offsite power is available and energizing the ESF buses. REF: EOP VALIDATION REPORT APPENDIX A	Power available should be determined by using the voltmeter between the 13.8kV/4160V transformer mimic and the 4160V supply breaker switch. The purpose of the lights has been clarified to indicate to the operator whether and which feed from the 13.8kV buses is lined up. The indicating light color has been revised to red. The light input has been revised to indicate that the supply breaker from that 13.8kV bus is in the closed position. Since the supply breaker cannot be closed unless the corresponding disconnect switch is closed, this light indicates that the supply breaker and disconnect switch from that 13.8kV bus are both in the closed position. (Cont.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
		Information has been issued to the Operations and Training Departments identifying the above resolution; this information has been included in the operator requalification program. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-367 S-484 S-679 S-725 S-748 P_1-6.5.3.1 P_2-App. H H.1 H.2.2 H.3.1	Rototellite green light color is not distinguishable. REF: INITIAL HED RESOLUTION REPORT PAGES A-4, A-5	This HED was reviewed by a task team and the following is noted: Where panel space limitation was not a factor, the rototellites were replaced with conventional indicating lights. This occurred on panels CP001, CP002, CP003, CP004, CP005, and CP006. The rototellites were retained on panels CP007 and CP008 due to panel space limitations. A space limitation problem was encountered on panel CP022 where rototellites are installed, but the rototellites were not considered to be a problem since these are positioned on a vertical surface. The vendor advises that these rototellites are a standard design used in numerous power plant control room applications. (Cont'd)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
		The STP circuit design is such that the bulbs will operate at approximately 5 percent above the rated voltage, thereby increasing the intensity but somewhat reducing the life. A human factors evaluation performed during December 1986 has determined that these lights meet the criteria; the visibility under actual operating conditions is acceptable. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1006 P_1-6.6.3.6 P_2-6.4.1.2 6.4.5.E 6.4.5.H	Labeling of the CCW and ECW pump switches is too similar. The CCW and ECW switches are close to each other and some operators have used the wrong switch. REF: EOP VALIDATION REPORT APPENDIX A	The nameplates have been revised to spell out the full names of the pumps Additionally, the CCW and ECW systems have been demarcated with different shades of paint. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1007 P_1-6.6.1.2 6.6.3.2 6.6.6.4 P_2-6.4.1.3 6.4.5 App. N N.1.2	Labels and mimic for the component cooling water (CCW) system are inadequate. REF: EOP VALIDATION REPORT APPENDIX A	The labels and mimic have been revised to improve descriptions, eliminate possible confusion, better reflect system arrangement, and provide differentiation between trains. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1008 P_1-6.6.1.1 6.6.6.3 P_2-App. S S.4.E	The load center switches on CP010 that must be actuated to de-energize the control rod drive motor generator (MG) sets after an "Anticipated Transient Without Scram" (ATWS) are not easily identifiable. REF: EOP VALIDATION REPORT APPENDIX A	The handles of those particular switches have been color coded to provide a contrast to other switches. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2. (Refer also to HED-1079, Category B.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1045 P_1-6.6.6.2 P_2-6.8.1.3 6.5.1.3 App. N N.1.1	Existing demarcation on CP006 does not prevent association of SG 1B level meters with SG 1A PORV control, and SG 1D level meters with SG 1C PORV control. REF: RANDOM SAMPLE REVIEW OF DEMARCATION PAINTING (EXECUTIVE SUMMARY CURRENT ADDENDUM, SECTION 5.0, ITEM 8)	Demarcation lines have been added to separate the SG groups. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1095 P_1-6.7.2.7 P_2-11.1.1	Operator action points shown on QDPS and ERFDADS displays are not consistent with the EOPs in all cases. REF: ENGINEERING OBSERVATION AND SPDS MAN-IN-THE-LOOP VALIDATION	The QDPS displays have been revised to reflect the current EOP setpoints. Several of the QDPS displays had been designed such that the current EOP setpoints could not be entered. The QDPS software has been revised such that the correct setpoints can now be entered. These correct setpoints have been entered, and the displayed setpoints are in agreement with the EOP setpoints. The ERFDADS displays have been modified to reflect the current EOP setpoints. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1108 P_1-6.7.2.7 P_2-11.1.1 11.1.4 App. Q Q.7	The SPDS does not accurately monitor Critical Safety Function (CSF) status under adverse containment conditions. This can result in a less conservative CSF indication for core cooling and heat sink. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The SPDS software has been revised to incorporate adverse containment setpoints so that the algorithm automatically changes to the correct setpoints. Thus, the CSF status box colors are determined using correct setpoints for the conditions existing in the containment. In addition, SPDS displays have been revised to show "ADVERSE CNTMT" in reverse video in the vicinity of parameters whose setpoints are affected during adverse containment conditions, i.e., RCS subcooling and core exit temperatures on the CSF core cooling display, and in the vicinity of the steam generator levels on the CSF heat sink display. These display changes are essential for the monitoring of CSF parameters and status during adverse containment conditions. (Cont'd)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
		Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1134 P_1-6.7.2.6 P_2-App. Q Q.6	The QDPS and ERFDADS "SI TERM/REINIT" displays provide information on the parameters, requirements, and current status of values for terminating or reinitiating Safety Injection (SI). However, the values provided for "REQ'D STATUS" are incorrect in some cases as compared with the EOPs, and in some cases the displays are incomplete. Additionally, adverse containment conditions also affect certain values, but this is not identified on the displays. (Cont.)	The ERFDADS display has been revised to show the correct values for SI termination/reinitiation, based on the EOPs, and to identify adverse containment conditions. The QDPS "SI TERM/REINIT" display has been revised to correct setpoints shown incorrectly. The display has also been revised to add the actual RCS pressure value for "Current Status" and the required value for "Req'd Status", based on the EOPs. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
	Discrepancies of displays providing incorrect setpoints and not identifying setpoints affected by adverse containment conditions are considered HED Category A. Discrepancies of displays providing incomplete setpoint data are considered HED Category C. REF: OPERATOR OBSERVATION DURING SPDS MAN-IN-THE-LOOP VALIDATION Note: Reference P_1 is NUREG-0700 Section 6 Number P_2 is STP Criteria Report Number	

HF AREA Panel Layout HED CATEGORY A

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1005 P_1-6.8.1.3 P_2-6.5.1.3	The Safety Injection System layout is confusing. The three trains and various subsystems are not clearly differentiated. REF: EOP VALIDATION REPORT APPENDIX A	Mimics have been revised to clearly differentiate between the SIS trains and subsystems. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

CATEGORY B HED DISPOSITIONS

HF AREA Workspace HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1030 S-0177 P_1-6.1.5.3.f P_2-App. D D.1.2.G	Glare exists from meters on panels CP001 through CP010. REF: CATEGORY E EVALUATIONS	Lighting modifications have been performed in the control room to address lighting concerns. After evaluation to determine settings for proper lighting levels (see HED-1061, Category B), glare problems were again found. These problems have been documented as HED-1150 (Category B). Based on the opening of HED-1150, this HED is considered closed for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1061 S-0170 P_1-6.1.5.3.a P_2-App. D D.1.2	With control room lighting at maximum setting, criteria levels not satisfied are: • Maximum of 50 footcandles on CP001, CP002, CP007, CP008, CP009 • Minimum of 20 footcandles on CP004, CP005 With lighting at reduced level (rheostats at 8 o'clock), levels not satisfied are: • Minimum of 20 footcandles on CP004, CP005 REF: CATEGORY E EVALUATIONS	Additional light fixtures have been added near panels CP004 and CP005. The light survey has been repeated to establish an optimum setting for the light dimmers. This confirmed that the design change resulted in illumination levels meeting the criteria. The light dimmer knobs were marked to identify the optimum setting. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1062 S-0182 P_1-6.1.5.4.c P_2-App. D D.1.3.B	The emergency lighting illumination levels on panels CP001, CP004, CP006, and CP010 do not meet the 10 footcandle requirement. REF: CATEGORY E EVALUATIONS	Additional lighting has been provided for the main control panel horseshoe area. Lights have been balanced between the two banks of lighting. Another lighting evaluation has been performed. The study included panels CP001 through CP010, and panels CP018 and CP022 as well. Additional locations were observed where the criteria were not met (see HED-1143, Category C). Based on the opening of HED-1143, this HED is considered closed for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1063 S-0184 P_1-6.1.5.5.a P_2-App. D D.1.4.B S-0185 P_1-6.1.5.5.a P_2-App. D D.1.4.C S-0186 P_1-6.1.5.5.b P_2-App. D D.1.4.D S-0187 P_1-6.1.5.5.c P_2-App. D D.1.4.E	Noise levels in the control room with two and three trains of HVAC operating exceed the 65 dB(A) limit, resulting in communication difficulty. REF: CATEGORY E EVALUATIONS	The control room HVAC system has been revised and balanced to reduce noise levels per the design criteria. A follow-up survey was performed in Unit 1, which showed that noise levels are within the criteria except for one operating configuration at one representative location. This exception has been documented as HED-1088 (Category D). Noise level surveys performed in the Unit 2 control room have indicated that noise levels are below the 65 dB(A) limit for the normal operating configuration of two HVAC trains in service. Three-train HVAC operation noise level measurements have not yet been performed. These surveys will be performed as part of the resolution of HED-1088. Based on the above actions, this HED is considered closed for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1150 P_1-6.1.5.3.e P_2-App. D D.1.2.E	Overhead lighting units (egg crates) permit light from fluorescent tubes to impinge directly on the Main Control Panel surfaces resulting in glare on panel mimics and meters. REF: CATEGORY E EVALUATIONS	This discrepancy remains under evaluation to determine final disposition. This final disposition will consider normal and emergency lighting levels as well. (See Category B HED-1061, Category B HED-1062, and Category C HED-1143.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1051 P_1-6.3.1.2 P_2-10.2.B	The Containment Isolation Phase A signal to several valves is defeated by moving the transfer switch away from the "Control Room" position. However, Bypass/Inop indication for these valves is not shown on the Containment Isolation Phase A lampbox. Valves in question are: Train A: FV-2454 Train B: FV-2455 FV-4823 Train C: FV-4454 FV-4455 FV-2458 REF: ENGINEERING OBSERVATION	The ESF Status Monitoring System has been revised to provide Bypass/Inop windows for these valves on the Containment Isolation Phase A lampbox and delete the windows on the incorrect lampbox. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1052 P_1-6.3.1.2 P_2-10.2.B	The Main Steam Isolation signal for the drain valves is defeated by moving the transfer switch away from the "Control Room" position. However, Bypass/Inop indication for these valves is not shown on the Steam Line Isolation lampbox. Valves are FV-7900A, FV-7901A, FV-7902A, and FV-7903A. REF: ENGINEERING OBSERVATION	The ESF Status Monitoring System has been revised to provide Bypass/Inop windows for the main steam drain valves on the Steam Line Isolation lampbox and delete the windows on the incorrect lampbox. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1053 P_1-6.3.1.2 P_2-10.2.B 10.2.C	The Safety Injection signal is defeated for the Radiation Monitoring and Hydrogen Analyzer room fans by moving the transfer switch away from the "Control Room" position. However, Bypass/Inop indication for these fans is not shown on the Control Room HVAC or Combustible Gas Control lampboxes. REF: ENGINEERING OBSERVATION	The ESF Status Monitoring System has been revised to provide Bypass/Inop windows for these components on the Control Room HVAC and Combustible Gas Control lampboxes (2M60, 2M61, 22M10, 22M04 and 22M06). The windows have been deleted on the incorrect lampbox. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1054 P_1-6.3.3.3.b P_2-10.2.C	RHR heat exchanger bypass and flow control valves are shown for Bypass/Inop status in the RHR section of the Safety Injection lamp-boxes. However, the Bypass/Inop status is applicable to the LHSI portion instead, based upon the alarm condition. During full power operation, the operator would believe the RHR system to be inoperable rather than the SI system. During RHR conditions, when flow is being throttled and the heat exchanger bypassed, the windows would always be lit. REF: ENGINEERING OBSERVATION	The ESF Status Monitoring System has been revised by moving the windows from the RHR system block to the LHSI system block in the SI lampboxes (typical all three trains). Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1066 P_1-6.3.1.2 P_2-10.2.D	During a loss of offsite power (LOOP), the ESF Status Monitoring System does not provide indication of components that failed to actuate properly in response to the LOOP. The input provided is inappropriate, showing only bus undervoltage condition, which is removed when the standby diesel generator provides power to the bus. Thus, operators do not receive indication of which components failed to actuate, which is the function of the fail-to-actuate subsystem. REF: STARTUP OBSERVATION	The input to the ESF Status Monitoring System fail-to-actuate subsystem has been revised, using the ESF load sequencer output indicating a LOOP condition. Thus, after a LOOP, components failing to operate properly are alarmed through the fail-to-actuate subsystem of ESF Status Monitoring. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1067 P_1-6.3.1.2 P_2-10.2.D	The ESF Status Monitoring System logic provides fail-to-actuate alarms during a loss-of-offsite power (LOOP) to HVAC components. However, these components are not actuated on LOOP. REF: STARTUP OBSERVATION	ERFDADS provides equipment status information for use in the ESF Status Monitoring System logic. The ERFDADS software has been modified such that information provided to ESF Status Monitoring, when acted upon by that logic, results in alarms for components only when the component should have operated and did not operate properly following a LOOP. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1081 P_1-6.3.3.1 6.6.5.1 P_2-6.4.1.2	Annunciator and ESF Status Monitoring lampboxes do not have labels corresponding to annunciator response procedures. Temporary labels are currently in use. REF: STARTUP OBSERVATION	Temporary labels for the annunciator and ESF Status Monitoring lampboxes have been replaced with permanent labels conforming to the CRDR criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1096 P_1-6.3.3.1 6.3.3.3 P_2-8.5.1.2	Currently, Containment Isolation Phase B bypass/inoperable and fail-to-actuate indications are shown using the Containment Isolation Phase A ESF Status Monitoring windowbox. The bypass/inoperable windows for Phase B are not differentiated from the Phase A windows; the Phase B fail-to-actuate windows are not clearly differentiated from the Phase A component windows. (Use of the Phase A windowbox for Phase B indications was implemented as an interim fix until a long-term design could be implemented.) This situation leads to operator confusion as to (Cont.) Note: Reference P_1 is NUREG-0700 Section 6 Number P_2 is STP Criteria Report Number	The Phase A windowbox has been revised as follows: A) Relabeled as Phase A/Phase B B) Differentiation between and labeling of Phase A and Phase B fail-to-actuate system indications component windows. C) Phase B signal presence window provided in a manner consistent with other ESFAS signals. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
	where the Phase B isolation ESF Status Monitoring is displayed in the control room. Also, the light location used to indicate Phase B actuation is a fail-to-actuate window, and thus tends to indicate an abnormal condition when one does not in fact exist. REF: ENGINEERING OBSERVATION Note: Reference P_1 is NUREG-0700 Section 6 Number P_2 is STP Criteria Report Number	

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1099 P_1-6.3.1.2.d P_2-8.3.E 6.1.2	Annunciator windows for shared systems and equipment are provided in the Unit 1 control room, but are not provided in Unit 2. REF: OPERATOR OBSERVATION	Annunciator windows for critical shared systems and equipment (e.g., circulating water system) have been provided in the Unit 2 control room. Based on the above actions, this HED is considered resolved.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1135 P_1-6.3.1.4 P_2-8.4.4	QDPS alarm windows are identified as Priority 3 (white) windows. However, QDPS alarms identify Tech Spec limiting conditions for operation (LCO) violations, and therefore should be Priority 2 (yellow) windows. REF: ENGINEERING OBSERVATION	The QDPS alarm windows have been changed to Priority 2 (yellow) lenses. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1002 P_1-6.4.1.1.c P_2-4.3.1 5.4	Control switches installed on Transfer Switch Panel ZLP-701 for control of the RHR system sample select valves do not have the same action as the switches located on Main Control Panel CP002 which control the same valves. Both Main Control Panel and Transfer Switch Panel control switches are required to meet the same criteria established in the Control Room Design Review Criteria Report. REF: ENGINEERING OBSERVATION	The control switches on Transfer Panel ZLP-701 have been changed so that their action is identical to those on Main Control Panel CP002 and meet the CRDR criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1003 P_1-6.4.1.1 6.1.1.1 P_2-6.2.1 6.1.1.1	Emergency stop capability for shutting down the Standby Diesel Generators from the control room is not provided. Thus, if the diesel generator's cooling water fails, the generator might overheat before it can be stopped locally. REF: EOP VALIDATION REPORT APPENDIX A	An "Emergency Stop" switch in the control room has been provided for each Standby Diesel Generator to override the start signal and stop the diesel. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1079 P_1-6.4.1.2 6.4.2.2 P_2-6.2.1.10	Trip/actuate and reset pushbuttons are inconsistent in color coding (red vs. white) and use of guards. There is also no color coding of the Electroswitches used for ESFAS actuation. REF: ENGINEERING OBSERVATION	The trip/actuate switches have been color coded red; additionally, pushbuttons have been provided with guards. Reset switches are color coded white; guards are not provided for reset pushbuttons since no significant adverse effects will result from reset. Based on the above action, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-703 P_1-6.4.3.3 P_2-App. E E.1.5.1	Legend pushbuttons on the main turbine insert panels are not readily distinguishable from legend lights. REF: INITIAL HED RESOLUTION REPORT PAGE B-8	A special study recommended the "Closed Corner Octagon" marking for the controls. Refer to the CRDR Special Studies Report, "Distinguishable Legend Pushbutton from Legend Lights". The study recommendation has been implemented. A human factors evaluation was performed during December 1986 and the implementation found to be satisfactory. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-711 S-734 S-695 S-705 S-699 S-459 P_1-6.4.1.1 P_2-6.2.1	"Select" function switches and pump or fan control switches are not provided with knurled or J-handles respectively on panels CP001, CP003, CP004, CP005, CP006 and CP007. REF: INITIAL HED RESOLUTION REPORT PAGE B-9	These switches were initially changed to knurled handles for "select" functions and J-handles for pump or fan control. A special study recommended lever handles for "select" functions. Refer to the CRDR Special Studies Report, "Knurled Knob Position Indicator". The study recommendation has been implemented. A human factors evaluation was performed during December 1986 and the implementation was found to be satisfactory. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1013 P_1-6.5.1.5 P_2-App. F F.5	The scales on the reactor coolant pump seal flow recorders are a mixture of linear and logarithmic (square root) scales. REF: EOP VALIDATION REPORT APPENDIX A	The signal conditioning for the logarithmic flows has been revised so that all three inputs are linear. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1098 P_1-6.5.1.1 6.5.1.2 6.5.1.4 P_2-6.3.1.2 App. F F.1 F.3.4	Condenser vacuum indicators in the control room read in absolute pressure; procedures and trip setpoints are expressed in inches of mercury vacuum. Mental calculations are required to determine system status. REF: OPERATOR OBSERVATION	The indicator scales have been replaced to read in inches of mercury vacuum rather than absolute pressure, reading "30" at the bottom of the scale and "0" at the top. Based on the above actions, this Category B HED is considered resolved for Unit 1 and Unit 2. To resolve the resulting discrepancy of having an upside-down scale and the failed indicator reading 30 inches of mercury vacuum (considered to be a Category D HED), the instrument loop will be revised to reverse the transmitter output, and change the scale to read "0" at the bottom and "30" at the top.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1128 P_1-6.5.1.1 6.5.3.3 6.6.3.1 P_2-6.3.1.2 App. H H.3 6.4.5	The steam dump valve position indicating lights are not provided with any labeling indicating to which side of which condenser the valves are connected. Should one valve leak, the operator is unable to quickly direct auxiliary operators to the proper valve location.. REF: OPERATOR OBSERVATION DURING SPDS MAN-IN-THE LOOP VALIDATION	The position indicating lights for the steam dump valves have been provided with labeling indicating condenser number and side, e.g.: CNDSR 11 WEST. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1132 P_1-6.5.1.1 6.5.1.2 P_2-6.3.1.2 App. F F.1	Delta-I on each of four nuclear instrumentation (NI) channels is available for recording only on NR-0045, a two-pen strip chart recorder. NI channels of source range (SR), intermediate range (IR), power range (PR), or Delta-I may be recorded by each pen via selector switches. Scales are provided on the recorder for SR, IR, and PR inputs, but are not provided for Delta-I inputs. Operator needs for trending Delta-I and for trending SR, IR, and PR flux cannot be met by the existing two-pen recorder. REF: OPERATOR OBSERVATION	The four Delta-I inputs have been removed from NR-0045 and moved to individual recorders NR-0041 through NR-0044 for continuous recording, by combining Delta-I, upper flux, and lower flux for each of the power range channels on a three-pen recorder. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-006 S-288 S-676 S-299 S-310 S-764 S-787 S-480 S-364 S-060 S-912 S-961 S-998 P_1-6.5.2.3 P_2-App. F F.6	Meter zone markings are not used to denote operational implications. REF: INITIAL HED RESOLUTION REPORT PAGE B-13	A zone coding scheme has been developed. A human factors evaluation of the materials and methods to be used was performed during December 1986. The zone coding implementation method has been determined to meet the criteria via actual demonstration. Implementation of the meter zone coding throughout the control room has been completed. The zone coding has been reviewed; the review has determined that the installed coding meets the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-671 S-743 S-650 S-782 S-360 S-392 P_1-6.5.1.5 P_2-App. F F.4.C	Intermediate graduation marks are not used on scales with five or more graduations between numerals. REF: INITIAL HED RESOLUTION REPORT PAGE B-17	Engineering documents such as the meter scale drawings have been corrected. New meter scales have been installed. A human factors evaluation performed during December 1986 has determined that the installed scales meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-716 S-666 S-739 S-776 S-470 P_1-6.5.1.2 P_2-App. F F.1	Meters contain parameters which are in a form that is not immediately usable by the operator. REF: INITIAL HED RESOLUTION REPORT PAGE B-15	Engineering documents such as the meter scale drawings have been corrected. New meter scales have been installed. A human factors evaluation performed during December 1986 has determined that the installed scales meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-718 S-668 S-741 S-757 S-778 S-471 S-404 S-406 P_1-6.5.1.4 P_2-App. F F.3	Standard abbreviations are not used on meter faces. REF: INITIAL HED RESOLUTION REPORT PAGE B-16	Engineering documents such as the meter scale drawings have been corrected. New meter scales have been installed. A human factors evaluation performed during December 1986 has determined that the installed scales meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-719 S-670 S-742 S-649 S-759 S-781 S-475 S-359 S-334 S-329 P_1-6.5.1.5 P_2-App. F F.4.A	There are more than nine graduations between scale numerals. REF: INITIAL HED RESOLUTION REPORT PAGE B-17	Engineering documents such as the meter scale drawings have been corrected. New meter scales have been installed. A human factors evaluation performed during December 1986 has determined that the installed scales meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-720 S-672 S-744 S-651 S-760 S-783 S-476 S-361 P_1-6.5.1.5 P_2-App. F F.4	It is difficult to distinguish between intermediate and minor graduation marks on meter scales. REF: INITIAL HED RESOLUTION REPORT PAGE B-18	The meter task team has applied the following criteria to the meter scale redesign effort (graduation mark thickness): Major graduations 3-point or 3/64 inch; Intermediate graduations 2-point or 1/32 inch; Minor graduations 1-point or 1/64 inch. Engineering documents such as the meter scale drawings have been corrected. New meter scales have been installed. A human factors evaluation performed during December 1986 has determined that the installed scales meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-724 S-675 S-747 S-655 S-763 S-786 S-479 S-408 S-911 S-960 S-997 P_1-6.5.2.2 P_2-App. G G.2.3	Vertical meter pointers are blac instead of red. REF: INITIAL HED RESOLUTION REPORT PAGE B-19	The possibility of painting the black pointers red was investigated but deemed not feasible. Painting pointers leads to instrument inaccuracies. Vertical meters with black pointers have been replaced with ones with red pointers. Based on the above actions, this HED is considered resolved for Unit 1. These same changes are being implemented for Unit 2. (Circular meter pointers are readily visible; therefore the change in pointer color is not required.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-871 S-885 P_1-6.5.1.5 P_2-App. F F.5	Parameters which must be compared have meter scales with incompatible numerical progression and scale organization. REF: INITIAL HED RESOLUTION REPORT PAGE B-19	New meter scales have been installed and a human factors evaluation performed during December 1986 determined that the installed scales meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-877 S-880 S-882 S-872 S-873 S-884 S-800 S-804 S-808 P_1-6.5.1.2 P_2-App. F F.1.3	Meters have inappropriate ranges. REF: INITIAL HED RESOLUTION REPORT B-16	Engineering documents such as the meter scale drawings have been corrected to reflect the correct ranges. New meter scales have been installed. A human factors evaluation performed during December 1986 has determined that the installed scales meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-878 S-879 S-881 S-870 S-874 S-883 S-799 S-803 S-807 S-892 P_1-6.5.1.2 P_2-App. F F.1.1	Scales are not consistent with the degree of precision and accuracy required. REF: INITIAL HED RESOLUTION REPORT PAGE B-15	The meter task team has matched the meter scales to the operating procedures requirements. Engineering documents such as the meter scale drawings have been corrected. New meter scales have been installed. A human factors evaluation performed during December 1986 has determined that the installed scales meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1016 P_1-6.6.6.4 P_2-App. N N.1.2	The mimic for the 13.8 kV bus on panel CP010 is confusing because of the number of the parallel horizontal paths shown. REF: EOP VALIDATION REPORT APPENDIX A	The parallel orange mimic lines that represent the 13.8 kV buses have been differentiated amongst themselves by adding black dashes and boxes onto the existing mimic lines. These subject mimic lines have been reviewed; this review has determined that the installed markings are effective in differentiating the mimic lines. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1046 P_1-6.6.3.1 P_2-6.4.5.I	Labels "SG FW INLET" and "SGFP SUCT HDR" do not correspond to the meters they identify. REF: OPERATOR OBSERVATION	The labels have been reversed, so that the label is provided for the appropriate meter. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1101 P_1-6.6.3.2 P_2-6.4.5.A	The labels for the manual actuation switches for Safety Injection (SI) currently say "ESF ACT". The label "SI" is quite small and mounted on the switch plate. Confusion results as to which switch is to be used for manual SI actuation. REF: OPERATOR OBSERVATION DURING SPDS MAN-IN-THE-LOOP VALIDATION	The labels have been revised on both panels CP001 and CP005 to read "SI ACT". Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1102 P_1-6.6.3.2 P_2-6.4.5.F	"AFW ACTUATE" is used on various labels to indicate AFW actuation as a result of steam generator (SG) low-low water level. However, the operators have misinterpreted the label as meaning AFW auto actuation from any signal, and have attempted to reset the signal even though SG low-low level was not reached. REF: ENGINEERING OBSERVATION DURING SPDS MAN-IN-THE-LOOP VALIDATION	All usages of "AFW ACTUATE" have been revised to indicate "SG LO-LO LVL" to designate that AFW actuation in response to SG low-low level has occurred. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1131 P_1-6.6.3.2 P_2-6.4.5	Turbine bearing water spray valve pushbutton labels identify the valve number, but do not indicate which bearings are being sprayed by that valve. In case of a need to spray a particular bearing, identified to the operator by location, the operator would be unable to quickly identify which pushbutton to actuate. REF: OPERATOR OBSERVATION DURING SPDS MAN-IN-THE-LOOP VALIDATION	The label for each valve pushbutton has been replaced with a label indicating both the valve number and the bearing being sprayed. The hierarchical label identifies these pushbuttons as turbine bearing water spray valves. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1159 P_1-6.6.3.6 P_2-6.4.5.H	On the Auxiliary Shutdown Panel, the control transfer pushbuttons on the controllers for the RHR heat exchanger valves and the charging flow control valves have small labels indicating "MCB" and "ASP" control. The controllers are very similar to those in the control room, where the pushbuttons are for manual and automatic control. The small labels are not noticed, and deviate from STP convention ("CR" and "ASP"). REF: OPERATOR OBSERVATION	Larger labels are being provided clearly indicating "CR" and "ASP" control. Other enhancements are also being considered to heighten awareness by the operator that pushbuttons are for control transfer, rather than manual/auto control.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1161 P_1-6.6.1.1 P_2-6.4.1.2	On the Auxiliary Shutdown Panel, just below the large "RHR" label, are three pairs of indicating lights that are not labeled as to their source or meaning. Operators are confused as to meaning, interpreting the lights as "RHR Pump Status" or "RHR Heat Exchanger Valve Status". REF: ENGINEERING OBSERVATION	The source and meaning of these lights has been determined. Evaluations are being made regarding what lights are actually needed. The lights provided as a result will be appropriately labeled.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-584 S-216 S-692 S-637 S-615 S-626 S-449 S-437 S-345 S-342 P_1-6.6.4.1 P_2-App. M M.1.A	One-hundred-seventy-three labels on CP003 use 0.125-inch letters which allows a viewing distance of only 21 inches. REF: INITIAL HED RESOLUTION REPORT PAGE B-25	An extensive study corrected this HED. The study is described in Note L-1 of the initial HED Resolution Report and included reviews of subtended visual angles, reviews by plant operations personnel, and other tasks. A human factors evaluation performed during December 1986 determined that component labels are suitable for a viewing distance of 42 inches as identified in Criteria Report, Appendix V, Table 4-1. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
S-591 S-693 S-602 S-639 S-618 S-630 S-447 S-440 S-343 S-346 P_1-6.6.4.1 P_2-App. M M.1.G	Stroke width-to-character height ratio is not between 1:6 and 1:8 on the service engravings and engraving is inconsistent. REF: INITIAL HED RESOLUTION REPORT PAGE B-25	An extensive study corrected this HED. The study is described in Note L-1 of the initial HED Resolution Report and included reviews of stroke width-to-character height ratios, reviews by plant operations personnel, and other tasks. A human factors evaluation performed during December 1986 determined that stroke width-to-character height ratio was between 1:6 and 1:8 as identified in Criteria Report, Appendix V, Section 4.3. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1026 P_1-6.7.2.4 P_2-App. Q Q.4.A	NIS displays on QDPS and ERFDADS identify readings for power range neutron flux by letters A, B, C, and D. It is not clear whether RCS loops or channel separation groups are being identified. REF: ENGINEERING OBSERVATION	The QDPS and ERFDADS displays have been revised to clearly indicate which NIS channel (I,II,III,IV) is being shown. Additionally, the bar graph displays of power range neutron flux have been revised to show the corresponding RCS loop. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1033 S-0812 P_1-6.7.2.7 P_2-App. S S.3	The Proteus computer use of color deviates from Appendix S of the Criteria Report. The most significant problem is the use of magenta for parameter bars and text. Magenta is the color designated for Priority 1 Alarm Messages. Both the Proteus and ERFDADS computers use colors in a manner which deviates from the criteria. REF: CATEGORY E EVALUATIONS	The color convention problems identified were corrected during the plant startup phase. Use of color is being addressed during a human factors review of all Proteus and ERFDADS displays. Any additional discrepancies will be documented separately and corrected following that review. Color usage criteria for computer displays will also be updated in conjunction with that review. The use of magenta for text, other than alarm messages, has been eliminated. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1037 P_1-6.7.2.1 P_2-App. Q Q.1.B	1. The CRTs on the consoles have a glare problem due to the direct streaming of light from the overhead light fixtures. 2. The ERFDADS panel-mounted CRTs have a reflectance problem. They act as a mirror, displaying the control room prominently, and present a distraction to the operator. REF: CATEGORY E EVALUATIONS	CRTs have been provided with a non-reflective covering. Subsequently, the CRTs have been reviewed; this review has determined that the installed non-reflective coverings correct the glare and reflectance problems. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1041 S-0812 P_1-6.7.2.4 6.5.1.2 P_2-App. Q Q.4.A App. F F.1.1	There is inconsistency in information presentation among the Tech Specs, CR displays, and computer displays. For example, 1) RWST level indicator scale is in gallons; QDPS is displayed in percent. 2) BAT level indicator scale is in gallons; QDPS is displayed in percent. REF: CATEGORY E EVALUATIONS	A study has been performed to identify all inconsistencies in Tech Spec tank level presentations in the control room. (The inconsistency noted applies only to tank levels. Other Tech Spec parameters are consistently displayed to the operator.) In order to allow direct comparison of the Tech Spec requirement and the actual tank level, the criterion has been established that all tank levels be shown in the Tech Spec level unit. For the discussion of QDPS revisions, see Disposition Note CPT-1. Recorder and meter scales and ERFDADS tank level displays have been revised as necessary to reflect gallons in Unit 1 and in Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1042 S-0825 P_1-6.7.2.4 P_2-App. Q Q.4	On Proteus display CW-10P (Circulating Water Pumps Status), the motor upper guide bearing temperature is displayed as the motor thrust bearing temperature and vice versa for one of the circulating water pumps. REF: CATEGORY E EVALUATIONS	The graphics error has been corrected. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1047 P_1-6.7.2.4 P_2-App. Q Q.4	On the ERFDADS Critical Safety Function Display for Containment (CSF-Z), for containment wide range water level on each train, the letter "I" of "IN" (for inches) is overwritten by the data quality character. REF: ENGINEERING OBSERVATION	The display has been modified to avoid the overwrite condition such that the data quality character and the units are both displayed. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1048 P_1-6.7.2.4 P_2-App. Q Q.4	On the ERFDADS Normal Safety Function displays for RCS Integrity and Containment (NSF-P and NSF-Z respectively), incorrect information is displayed. On NSF-P, the flags for pressurizer PORV, safety, and head vent valves read OPN ("open"). These should read N/CLSD ("not closed"). On NSF-Z the flag for containment ventilation isolation valve inoperability reads F/CLS ("fail to close"), but should read INOP ("inoperable status"). REF: ENGINEERING OBSERVATION	The ERFDADS displays have been modified to display the correct information. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1049 P_1-6.7.2.4 P_2-App. Q Q.4	On the ERFDADS Normal Safety Function display for Core Cooling (NSF-C), the scale for total RHR flow is shown as 0-1200 GPM. The total RHR flow ranges from 0 to 12,000 GPM. REF: CATEGORY E EVALUATIONS	The display has been corrected for the bar graph to read from 0 to 12,000 GPM. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1050 P_1-6.7.2.4 P_2-App. Q Q.4	Values for RCB atmosphere radioactivity level, used on ERFDADS Normal Safety Function displays, are not available on the datalink from the Radiation Monitoring System to ERFDADS. These values are the RCB atmosphere noble gas and particulate radioactivity levels, and are used on the RCS Integrity and Containment NSF displays. REF: ENGINEERING OBSERVATION	The identified parameters have been added to the datalink from the Radiation Monitoring System to ERFDADS, and the ERFDADS database has been updated. These steps provide the necessary values for the displays. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1059 P_1-6.7.2.4 P_2-App. Q Q.4	On ERFDADS display CV-02, the centrifugal charging pump normal discharge valves are shown with incorrect (reversed) valve numbers. Inputs to display may be incorrect as well. REF: OPERATOR OBSERVATION	The display has been revised to show the correct valve numbers. The input variables have been verified as correct. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Panel Layout HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1012 P_1-6.8.1.3 P_2-6.5.1.3.C	The panel demarcation color pads for the power feeds on main control room panel CP010 to the Engineered Safety Features (ESF) buses on CP003 do not adequately identify that both a circuit breaker and a motor-operated disconnect switch must be closed to feed the Class 1E bus. REF: EOP VALIDATION REPORT APPENDIX A	The panel demarcation color pads have been revised to include the circuit breaker and the motor-operated disconnect switch. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Panel Layout HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1014 P_1-6.8.2.3 P_2-6.5.2.3	Recorder pens for steam generator water level and feedwater and steam flow are reversed relative to the sequence left to right of the indicators located above the recorder and showing the same parameters. REF: EOP VALIDATION REPORT APPENDIX A	The recorder pen inputs have been revised so that the recorder pen and indicator sequence are in agreement. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Panel Layout HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1158 P_1-6.8.2.1 6.6.3.1 P_2-6.5.2.1 6.4.5.A	On the Auxiliary Shutdown Panel, the RHR flow controller is adjacent to the temperature meter, and the temperature controller is adjacent to the flow meter. The flow controller should be labeled "HX Outlet Flow Cont", rather than "HX Bypass Flow Cont". REF: OPERATOR OBSERVATION	The meters are being reversed so the flow controller is adjacent to the flow meter and the temperature controller is adjacent to the temperature meter. The flow controller label is being revised to read "HX Outlet Flow Cont".

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Control/Display Integration HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1044 P_1-6.9.1.1 P_2-6.6.1.1.C	VCT pressure and level meters on CP004 have similar ranges (0-90 psig and 0-100%) with same minor scale increments (i.e., 2 units).	The pressure scale has been revised to use increments of 5 (psig), so as to differentiate this meter from the level meter. The level meter has been reviewed; the review has determined that the installed scale is effective in differentiation between the two meters.
	REF: OPERATOR OBSERVATION	Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Control/Display Integration HED CATEGORY B

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1138 P_1-6.9.1.2.c 6.9.2.2.d 6.8.2.1.a 6.8.2.2 P_2-6.6.1.2.C 6.6.2.2.D 6.5.2.1.A 6.5.2.2	The signals from two steam generator (SG) narrow range water level transmitters are displayed on a dual indicator. One of the signals is selected for use in control/recording via a selector switch immediately below the indicator. However, the left side of the indicator and the right switch position correspond to the same transmitter, and vice versa, increasing the likelihood of improper operator section. REF: OPERATOR OBSERVATION	The wiring for the SG level selector switches has been reversed so that the left switch position and the left side of the indicator correspond to the same transmitter. The escutcheon plates have been re-engraved to correspond with the rewiring. The arrangement is consistent with the steam flow and feedwater flow indicator/switch pairs in the same area of the panel. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

CATEGORY C HED DISPOSITIONS

HF AREA Workspace HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1060 S-0169 P_1-6.1.5.2.b P_2-App. D D.1.1.C	Air velocities in the control room exceed the 45 ft/min limit and cause drafts. REF: CATEGORY E EVALUATIONS	The HVAC design has been evaluated and the system rebalanced. Measurements in the Unit 1 control room show that air velocities at work stations are negligible. Velocities at four locations exceed the limit, but these are not locations at which people are stationary. Operators indicated that the air velocities at these locations are not of concern. Measurements in the Unit 2 control room show that the air velocities are negligible throughout. These measurements were made with two of the three HVAC trains operational; measurements with all three trains operational are being taken to verify conformance to the criterion of 45 ft/min maximum. Exceptions will be addressed as required.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1086 S-0162 P_1-6.1.4.1.i P_2-App. C C.1.F	Procedures for putting on, taking off, and controlling protective/emergency equipment were not available. REF: CATEGORY E EVALUATIONS	Vendor-supplied instructions for the self-contained breathing apparatus are provided in the container for each one. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1087 S-0164 P_1-6.1.4.3.b P_2-App. C C.1.I	The storage area and storage cabinet for emergency equipment are not clearly and distinctively marked. REF: CATEGORY E EVALUATIONS	The storage area and the outside of the storage cabinet are being clearly and distinctively marked.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1143 P_1-6.1.5.4.c P_2-App. D D.1.2	Emergency lighting conditions do not meet the 10-footcandle minimum criterion on some main control panel surfaces. REF: CATEGORY E EVALUATIONS	The need for additional illumination is being re-evaluated, together with resolution of HED-1150 (Category B), concerning glare.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1156 P_1-6.1.1.4.a P_2-6.1.1.4.A	The annunciator procedures binders are inserted between the guard rail and Section D on main control panels CP001 through CP010, impeding access to the panels and manipulation of controls. REF: CATEGORY E EVALUATIONS	This discrepancy remains under evaluation to determine final disposition.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Communications HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1084 P_1-6.2.1.8.a P_2-7.1.2	There is no backup power for the HL&P four node telephone exchange center located in the MCO. This facility is housed in what appears to be temporary construction, wooden-framed building that is reported to leak. The site has experienced a major "crash" of this vital communication system and consequent loss of telephone communication. REF: CATEGORY E EVALUATIONS	An uninterruptible power supply has been installed for the MCO telephone switch. Additionally, a new power feed has been installed from the double ended 480V MCC in the switchyard. The building has been repaired. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1055 P_1-6.3.3.4 P_2-8.6.10	On the ESF Status Monitoring windows, abbreviations/acronyms that are not in Appendix L of the CRDR Criteria Report are used, as follows: SUPP, BU, RET, CSIV, EMERG, POS (when used for position), EXC (used for excess), CWS (when used for Chilled Water System), SL, SMP, CHRGR, FWIB. REF: ENGINEERING OBSERVATION	The abbreviations used on the ESF Status Monitoring windows and in CRDR Criteria Report Appendix L were reviewed. The window engravings having the specific examples identified in the observation have been corrected. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2. (Additionally, a review is ongoing of abbreviations used in the control room to verify their consistency with Appendix L.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1056 P_1-6.3.3.4 P_2-8.6.10	Various incorrect or inconsistent labels are used on the ESF Status Monitoring windows. REF: ENGINEERING OBSERVATION	The labels used on the ESF Status Monitoring windows specifically identified in the observation have been revised to correct the incorrect and inconsistent labels. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2. (Additionally, a review is ongoing to identify other incorrect labels and correct them.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1068 P_1-6.3.1.2 P_2-8.1	The seismic monitoring system annunciator window is not functional. Alarm on the seismic monitoring panel may not be audible across the control room. (Note: Seismic monitoring panel is located in the Unit 1 control room only.) REF: ENGINEERING OBSERVATION	A test was performed in Unit 1 to assess audibility of the seismic monitoring panel alarm across the control room, and verified that the alarm is audible. The seismic monitoring panel was modified to actuate annunciator windows in both Unit 1 and Unit 2. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1089 P_1-6.3.1.2 P_2-8.1	The Tech Specs require that the normal purge containment isolation valves (48-inch lines) be sealed closed during Modes 1-4. The valves are being sealed closed by removing power from the valve operators, thus removing control power as well. "Control power not available" is used for indicating bypass/inoperable status through ERFDADS and the ESF Status Monitoring System. Thus the ERFDADS displays and the status monitoring windows will show that these four valves are "abnormal" during the normal anticipated mode of operation. REF: ENGINEERING OBSERVATION	An annunciator window is being provided to alarm that any of these valves is not sealed closed during Modes 1 through 4. This window is Priority 2 (indicating that a Tech Spec LCO is not met). The logic for the Bypass/Inop status window provided for each valve is being revised such that the window is lit when the valve operator does not have control power during Modes 5 or 6. In these modes, the valve must be operable for offsite dose mitigation for a fuel handling accident. These same changes are being made on the ERFDADS displays.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1129 P_1-6.3.3.4 P_2-8.6.10	Lampbox 5M23 has three windows with engravings of "AUX FPMP START BLKD TRAIN A (B, C)". It is not clear what is meant when these windows are illuminated. REF: OPERATOR COMMENT DURING SPDS MAN-IN-THE-LOOP VALIDATION	These windows are illuminated when any steam generator has a 2-out-of-4 low-low level signal present and the reset button has been pushed for that actuation train (A, B, C). The engravings for these windows have been revised to read: SG LO-LO LVL ESFAS BLKD TRAIN A (B, C) Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1140 P_1-6.3.3.2.e P_2-8.6.1 8.6.9	The annunciator windows for AFW pump low discharge pressure are continuously in alarm when the pumps are turned off. This condition also exists on ERFDADS display AF-01. REF: OPERATOR OBSERVATION	The ERFDADS software has been revised to suppress the alarm when the pump is not running, thus removing the nuisance alarms for the annunciator windows and the ERFDADS display. Based on the above actions, this HED is considered resolved for Unit 1. These same changes are being implemented for Unit 2. (In addition, the Annunciator Task Force has identified other "nuisance" alarms. Those alarms are being resolved.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1141 P_1-6.3.3.2.e 6.3.3.4.a P_2-8.6.9 8.6.10	On channels II and III, the Tech Specs require availability of one battery charger. Mechanical interlocks are provided on the switchboard breakers such that only one charger can be connected to the switchboard at a time. However, when a charger is not connected to the switchboard, its Bypass/Inop window is lit, incorrectly indicating that conditions do not meet the operability requirements of the Tech Specs. REF: OPERATOR OBSERVATION	The ESF Status Monitoring lampboxes for channels II and III are being revised to show a single window for both chargers. The ERFDADS software is being revised such that the Bypass/Inop window is lit when both chargers for that channel are not operating. Similarly, the ERFDADS displays are being revised to show "INOP" when both chargers are not operating.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1031 P_1-6.4.3.3.b P_2-App. E App. H H.3.2	Legend pushbuttons on the turbine control panels for SGFP 11, 12, and 13 on panel CP006 do not conform to the convention of labels. The labels provided read "REM/LOC", where: REM - Control at turbine LOC - Control in control room Another pushbutton is labeled "RESET", meaning latch and reset. REF: OPERATOR OBSERVATION	The "REM/LOC" label has been revised to "TURB/CR", to provide positive indication of the active control station. The "RESET" label has been revised to "LATCH", to be consistent with the main turbine labeling in a similar application. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1083 P_1-6.4.1.2 P_2-6.2.1.6	The integrated communications consoles have three toggle switches that are subject to inadvertent actuation. This will result in the actuation of false main plant alarms as follows: 1. Evacuation 2. Fire 3. Reactor Containment Building Evacuation REF: CATEGORY E EVALUATIONS	Modifications for the communications consoles are being developed for evaluation and implementation so that two distinct actions are required for actuation of these alarms.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1015 P_1-6.5.1.1.a P_2-6.3.1.2	The Emergency Operating Procedures require a check to determine if the reactor coolant makeup system is on, to provide automatic makeup to the volume control tank. Currently there is no means of indication in the control room that confirms the status of the reactor coolant makeup system. REF: EOP VALIDATION REPORT APPENDIX A	The circuit has been revised to provide a "system start sealed in" output. A red light has been added above the reactor coolant makeup system control switch to indicate that the "system start" signal has been sealed in. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1018 P_1-6.5.1.1 P_2-6.3.1.2 6.3.1.3	There is inadequate feedback to show that depression of an ESFAS signal reset pushbutton has reset the signal. The reset pushbuttons and the status lights are on well-separated panels. REF: EOP VALIDATION REPORT APPENDIX A	Revisions have been made to use the ESF Status Monitoring system-actuate red lights to provide the feedback. Reset of an ESFAS signal results in the red light being extinguished. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1025 P_1-6.5.3.1 P_2-App. H H.1	The SG PORVs and the ECW valves controlling flow to the essential chillers are controlled by the QDPS. Panel indications (valve open/closed lights) are derived from the analog signal indicating valve position, which is not repeatable; the software setpoints of 0.5% and 99.5% for fully closed and fully open, respectively, are too restrictive, such that the valve position lights may never indicate a fully open or closed position. REF: STARTUP OBSERVATION	The QDPS software controlling valve position indicating lights on the Operator Interface Modules has been revised to make the setpoints adjustable. Initial setpoints are 5% and 95%. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1032 P_1-6.5.1.1 6.8.1.2 P_2-6.3.1.2 App. F F.1 6.5.1.2	During plant startup, the FW header pressure must be compared to the steam header pressure. The indicators are not in close proximity to each other, being on two adjacent panels and in two sections of the panels (Section D of CP006 and Section B of CP007). The pressure differential for a given procedure step must be determined to be 45 psid or greater. The minimum scale increments are 50 psi, rendering "x + 45 psig" readable for only a few values of x. REF: OPERATOR OBSERVATION Note: Reference P_1 is NUREG-0700 Section 6 Number P_2 is STP Criteria Report Number	A direct readout of the differential pressure has been provided on a Proteus computer display.

HF AREA Visual Displays HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1103 P_1-6.5.1.1 P_2-6.3.1.2	Certain recorders have no indications of engineering units on the scales. REF: ENGINEERING OBSERVATION	Designation of engineering units for each pen is being added to recorders on which this information is not provided.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1139 P_1-6.5.1.1.b 6.5.1.2.b 6.6.3.2 P_2-6.3.1.2 App. F F.1.1 6.4.5	The containment moisture indicator is a dewpoint temperature indicator, reading in °F. To determine whether the moisture level in containment is changing, the operator must take readings from this instrument and from the dry bulb temperature indicator adjacent to it, and use a psychrometric chart to convert this information into moisture levels. The discrepancy of the inaccurate meter nameplate and the discrepancy of requiring mental conversion are considered HED Category C. (Cont.)	The dewpoint temperature indicator nameplate has been revised to read "DEWPOINT" rather than "MOISTURE". As a temporary measure, a psychrometric chart has been provided in the control room to facilitate conversion. Based on the above actions, this Category C HED is considered resolved for Unit 1 and Unit 2. Further evaluation is being performed to determine the feasibility of providing an indicator reading directly in relative humidity, to resolve the Category D HED.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
	The discrepancy of not providing an indicator for reading directly in relative humidity is considered HED Category D. REF: OPERATOR OBSERVATION	

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1017 P_1-6.6.6.4 P_2-6.4.1.1 App. N N.1.2	The mimic of panel CP004 shows the normal discharge valves of the centrifugal charging pumps as the normal discharge valve for one pump and as the bypass valve for the other pump. Conversely, the bypass valves are shown as a bypass valve for one pump and as the normal discharge valve for the other pump. REF: EOP VALIDATION REPORT APPENDIX A	The discharge and bypass valve switches for charging pump 1A have been interchanged for fidelity to the system arrangement and to remain consistent with the switch arrangement for pump 1B. Also, the check valves in the discharge header have been added to the mimic. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1019 P_1-6.6.3.2 P_2-6.4.5	On panel CP005 the pressurizer pressure Safety Injection (SI) block/reset switch labeling is confusing. The escutcheon reads "RESET-blank-BLOCK" (three-position switch).	The switch escutcheons have been changed to read "UNBLOCK-blank-BLOCK" to provide better definition of the switch function; i.e., that the left position removes the signal block. The pressurizer pressure SI block and low steamline pressure SI block switches have been changed in this fashion.
	REF: EOP VALIDATION REPORT APPENDIX A	Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1020 P_1-6.6.3.1 P_2-6.4.5	Labeling of power lockout control switches for the Safety Injection (SI) system requires additional information on the nameplates in order to differentiate between the accumulator discharge isolation valves and the hot leg isolation valves. REF: EOP VALIDATION REPORT APPENDIX A	Labeling of the power lockout switches has been revised to identify the specific service. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1021 P_1-6.6.3.2 P_2-6.4.5	The train A, B, and C Safety Injection block/reset pushbuttons have confusing labeling. The escutcheon reads "BLOCK/RESET". REF: EOP VALIDATION REPORT APPENDIX A	The escutcheons have been revised to read "RESET". Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2. (See also HED-1130, Category C.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1057 P_1-6.6.2.1 6.6.3.2 P_2-6.4.1.1 6.4.5	The function of the AFW pump turbine trip pushbutton is not indicated. REF: EOP VALIDATION REPORT APPENDIX A	An escutcheon has been added to indicate the function of the pushbutton (i.e., "TRIP"). Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1058 P_1-6.6.3.3 P_2-6.4.5	The RCS temperature recorders have inconsistent panel labels and pen labels. REF: EOP VALIDATION REPORT APPENDIX A	The recorder inputs have been verified and the labels have been changed accordingly. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1077 P_1-6.6.1.1 6.6.6.2 6.8.1.3 P_2-6.4.1.2 App. N N.1.1 6.5.1.3	Demarcation zone coding and labeling are not adequate to properly identify system and train configuration on panel CP022 in the area for CR/EAB HVAC. REF: OPERATOR OBSERVATION	Demarcation and mimic options to provide visual distinction between trains of the same system and between systems are being developed for evaluation and implementation.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1078 P_1-6.6.5.1 6.6.3.1 6.6.3.3 P_2-6.4.5	Temporary labels have been added for power source identification on the lower left hand corner of main control panel labels, to correct inaccurate information or to provide missing information. REF: ENGINEERING OBSERVATION	Labels have been re-engraved to permanently add the power source of the items identified in a survey of the control panels. An ongoing program is under way to ensure that power sources are identified on nameplates, in accordance with the criteria.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1080 P_1-6.6.3.2 6.6.3.8 P_2-6.4.5	The controller for Reactor Coolant Purification flow control does not indicate valve open/close direction. REF: OPERATOR OBSERVATION	Labels are being provided to clearly indicate what the controller action is; i.e., "OPEN" or "CLOSE" the controlled valve.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1105 P_1-6.6.6.4.a 6.5.1.6 6.8.1.3 P_2-App. N N.1.2 App. S 5.4.G 6.5.1.3	Color coded mimics (red, blue, yellow) have been implemented on panel CP001 for the SI/RHR System. The CCW, ECW, ESF bus, and HVAC systems are not color coded in the same fashion. REF: OPERATOR OBSERVATION	Criteria are being developed for appropriate and consistent use of train-related color coding of mimics throughout the control room. After the criteria have been developed, the mimics in the control room will be modified to be consistent with the criteria. (See also HED-1091, Category D.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1130 P_1-6.6.3.2 P_2-6.4.5	Several signals causing ESFAS actuations can be reset, with that action also blocking the actuation signal, such as the SI signal. These reset pushbuttons say "RESET" and are not differentiated from the reset pushbuttons for signals that cannot be reset until the actuating signal is removed. REF: OPERATOR OBSERVATION DURING SPDS MAN-IN-THE-LOOP VALIDATION	All reset pushbuttons on the main control board have been reviewed for function. Each has been identified as to whether depressing the pushbutton will block the actuating signal, or whether the actuating signal must be removed prior to reset of the signal. The latter group of reset pushbuttons continues to be labeled "RESET". The former group has been revised such that the escutcheon reads: RESET (BLOCK) Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2. (See also HED-1021, Category C.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1133 P_1-6.6.3.1 6.6.3.2 6.4.2.2 6.8.2.1 P_2-6.4.1.1 6.4.5 6.2.1.9 6.5.2.1	On CP001, the switches for the SI check valve test valves have labels that are inaccurate for the valve service. Additionally, the switches are not arranged in a consistent manner. The discrepancy of inaccurate labels is considered HED Category C. The discrepancy of inconsistent switch locations is considered HED Category D. REF: ENGINEERING OBSERVATION	The switch labels have been revised to provide accurate descriptions of the valve service. Based upon the above actions, the Category C HED is considered resolved for Unit 1 and Unit 2. The switch and lamp locations will be evaluated for revision to achieve a consistent arrangement, as part of the plant modification process.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1145 P_1-6.6.3.2.a P_2-6.4.5.A	Some switches controlling jog valves are not identified as such, leading to misoperation by not holding the switch for a sufficient amount of time to achieve desired operation. REF: OPERATOR OBSERVATION	The escutcheon plates for these switches are being re-engraved to indicate the jogging operation.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1160 P_1-6.6.6.2.a P_2-App. N N.1.1	On the transfer switch panels and auxiliary shutdown panels, there is no coding or other identification showing which are transfer switches and which are control switches to help differentiate them, or associate one with the other. REF: OPERATOR OBSERVATION	Demarcation is being provided to associate related switches together; striping is being used to show that the transfer switch and control switch are one above the other on the panel.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1022 P_1-6.7.2.4 P_2-App. Q Q.4	QDPS display labeling errors have been identified during the QDPS V&V process. These errors also occur in ERFDADS displays that were developed based upon the QDPS displays. REF: QDPS V&V	For the discussion of QDPS revisions, see Disposition Note CPT-1. The ERFDADS displays have been reviewed, and the displays modified consistently with changes being incorporated into QDPS.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1023 P_1-6.7.2.4 P_2-App. Q Q.4	QDPS display labeling inconsistencies with Appendix L of the Criteria Report have been identified during the QDPS V&V process. REF: QDPS V&V	The CRDR Criteria Report, Appendix L, has been revised. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1024 P_1-6.7.2.4 P_2-App. Q Q.4	The display on QDPS does not accurately reflect the actual flow rates for AFW, RHR, ECW, and CCW flows when the actual flow is at or near zero. REF: OPERATOR OBSERVATION	The QDPS displays have been revised to provide a more accurate indication at low flow rates. When the flow signal falls below a preset low limit, the display reads "***". Because the flow indications are datalinked to ERFDADS, appropriate changes are being incorporated in ERFDADS to eliminate the misleading flow indication.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1027 P_1-6.7.2.4 P_2-App. Q Q.4	The QDPS and/or ERFDADS displays contain inconsistencies in nomenclature and labeling. Additionally, the operator action points for six variables must be available over a different range than currently specified. REF: ENGINEERING OBSERVATION	The ERFDADS displays have been revised to correct all problems noted. When the operator action point ranges were revised, the displays were reviewed to assure that background information on the display was not being overwritten. The QDPS displays have been revised to correct the inconsistencies in nomenclature and labeling noted (missing arrowhead, missing units). The QDPS software has been revised as required to permit adjustment within the needed range for operator action points. For discussion of remaining QDPS revisions, see Disposition Note CPT-1.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1036 P_1-6.7.2.4 P_2-App. Q Q.4	The various computer displays use abbreviations that do not comply with the Criteria Report Appendix L. REF: CATEGORY E EVALUATIONS	The abbreviations used on the computer displays and the abbreviations listed in CRDR Criteria Report Appendix L are being reviewed. As appropriate, the displays are being revised and the abbreviations list is being updated.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1038 S-0825 P_1-6.7.2.1 6.7.2.4 6.7.2.7 P_2-App. Q Q.1 Q.4 Q.7	The plant computer displays are generally good but problems with color quality and various display and menu discrepancies were noted. REF: CATEGORY E EVALUATIONS	CRTs have been adjusted and tubes have been replaced as required. (Display color quality was degraded due to poor CRT adjustment and "burned-in" tubes.) The identified display discrepancies are being resolved by ongoing programs for display review and revision.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1040 S-0854 P_1-6.7.2.4 6.7.2.7 P_2-App. Q Q.4 Q.7	The ERFDADS and Proteus computers use inconsistent labeling. The use in Proteus of a full background color with black letters is good, but violates criteria in the choice of background color. The ERFDADS use of cyan is not quickly distinguished from the remainder of the display. REF: CATEGORY E EVALUATIONS	An engineering review is being performed to evaluate the current displays in the computer systems, and determine how they can be improved and made more consistent. The display criteria and the displays themselves will then be revised. The displays will be made as consistent as possible based upon the differing machine capabilities.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1064 P_1-6.7.2.4 P_2-App. Q Q.4	Transfer switch labels and ERFDADS labels are inconsistent for switch positions. Transfer switch escutcheons use CR for control room, ASP for auxiliary shutdown panel, ZLP-xxx for another local panel, and LOCAL for control occurring at that same transfer switch panel. ERFDADS uses only LOCAL and REMOTE. REF: ENGINEERING OBSERVATION	ERFDADS transfer switch position descriptions are being revised to use CR for control room, ASP for auxiliary shutdown panel, ZLP for another local panel, and X PNL for the transfer switch panel. These revisions make the ERFDADS descriptions as close as possible to the transfer switch escutcheons, given the computer descriptor limitations.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1065 P_1-6.7.2.4.e P_2-App. Q Q.4.E	The identical displays in QDPS and ERFDADS may show a different value and/or quality for a calculated parameter because the algorithms performing the calculations are not the same in the two systems. REF: ENGINEERING OBSERVATION	ERFDADS algorithms are being revised to be consistent with QDPS. In the interim, use of substitute values is being administratively controlled; the cluster limits and referee values were chosen to minimize the differences in the information displayed.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1070 P_1-6.7.2.1 6.7.2.7 P_2-App. Q Q.1 Q.7	It is difficult to distinguish between green and yellow status boxes on the ERFDADS displays. REF: SPDS AUDIT	Colors are generally distinguishable from the intended viewing distance. CRTs have been readjusted to alleviate distinguishability problems. A problem regarding residual magnetism in certain panels has been identified. This residual magnetism is a significant contributor to the color problem noted. Panel degaussing is being performed. The symbols are being evaluated, with the aim of differentiating the status conditions both by color and by shape.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1072 P_1-6.7.2.7 P_2-App. Q Q.7	The SPDS Critical Safety Function displays do not change color based on parameter being in alarm condition. REF: SPDS AUDIT	The SPDS Man-in-the-Loop Validation has been performed; evaluation of color changes based upon alarm condition was performed as part of this validation. Refer to the discussion provided for HED-1121 (Category C) for the final disposition.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1075 P_1-6.7.2.4 6.5.1.2 P_2-App. Q Q.4 App. F F.1.3	AFW flow indication on QDPS may go offscale high during AFW actuation. If actuated by SG low-low level, automatic flow control may terminate while flow indication is still offscale high, if low-low level signal clears. REF: ENGINEERING OBSERVATION	The controls design for the AFW flow regulating valves has been revised, so that flow limiting to below 700 gpm (the upper limit of the QDPS AFW flow scale) is effective continuously. Thus, the flow will be on-scale at all times. Based on the above actions, this HED is considered resolved for Unit 2. These same changes are being implemented for Unit 1.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1082 P_1-6.7.2.4 6.7.2.6 P_2-App. Q Q.4 Q.6	On the ERFDADS Normal Safety Function Containment display (NSF-Z), the "INOP" flags for containment isolation status are not driven by the proper valves (i.e., all valves receiving Phase A or Phase B or CVI signals). REF: ENGINEERING OBSERVATION	Modifications to the ERFDADS software are being performed to ensure that all actuated valves are included in the calculation for the display flags.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1094 P_1-6.7.2.4 6.5.1.2 P_2-App. Q Q.4 App. F F.1.3	ECW flow displays on QDPS and ERFDADS use inappropriate ranges: too wide on flow to CCW heat exchanger, too narrow on flows to essential chillers. REF: STARTUP OBSERVATION	The QDPS and ERFDADS displays have been revised to use appropriate flow ranges for ECW flows. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1097 P_1-6.7.1.5 P_2-App. P P.2	There is confusion as to which CRT is being selected through the ERFDADS keyboard. Select key keycaps are engraved with the last part of the equipment numbers for the controlled CRTs. However, those numbers are not included on the CRT nameplates. Additionally, the left-to-right sequence of the select keys on the keyboard is reversed when compared with the CRT spatial arrangement. REF: OPERATOR OBSERVATION	The ERFDADS keyboards/CRT nameplates have been revised to correct the problems noted. The CRT nameplates have been revised to include the identifying number engraved on the keycaps. The left-to-right sequence of the keys is being revised to correspond to the CRT spatial arrangement.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1109 P_1-6.7.2.4 P_2-11.1.1 11.1.9 App. Q Q.4.A	The SPDS displays incorrect/misleading safety function status information during ATWS conditions. Since the reactor trip breakers remain closed during an ATWS, the Normal Safety Function status boxes remain on the SPDS displays instead of the Critical Safety Function status boxes required post-trip. REF: SPDS MAN-IN-THE-LOOP VALIDATION	Additional trip-related logic is being added so SPDS can detect that the plant should have tripped and automatically provide Critical Safety Function status indication.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1111 P_1-6.7.2.5 P_2-11.1.1 11.1.3.3 App. Q Q.5	SPDS top level display bar heights mislead the Unit Supervisor/Shift Technical Advisor, resulting occasionally in use of the bar height rather than status box color, and consequent incorrect determination of plant safety status. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The CSF top level display bar heights are being revised to provide different bar heights based upon the CSF status. Thus the CSF status box color and the bar height will provide consistent priority information to control room personnel.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1112 P_1-6.7.2.4 6.7.2.5 P_2-11.1.1 App. Q Q.4 Q.5	The Critical Safety Function-Core Cooling (CSF-C) EOP status tree wording "Upper Plenum" does not match either CSF-C display wording "Plenum" or "Upper Head". REF: SPDS MAN-IN-THE-LOOP VALIDATION	The CSF-C EOP status tree has been revised to replace the wording "Upper Plenum" with "Plenum". Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1115 P_1-6.7.2.4 6.6.3.3 P_2-App. Q Q.4 6.4.6 App. L	The abbreviation used for "Microcuries" is not consistent throughout the SPDS displays. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The engineering units for radioactivity concentration values on ERFDADS displays are being revised to "uCi/cc".

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1116 P_1-6.7.2.5 P_2-11.1.1 11.1.4 11.1.9 11.2.1.1	The failure of the SPDS to change automatically from Normal Safety Function displays to Critical Safety Function displays following reactor trip causes data to be displayed that is not consistent with plant conditions. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The NSF displays are being revised to display the information EX TRIP SIGNAL prominently, above the safety function status indicators, to indicate to control room personnel that the CSF displays should be used. Displays called by pushing the SPDS display keys will continue to be the CSF display when the reactor trip breakers are open and the NSF display when the breakers are closed.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1117 P_1-6.7.2.5 P_2-App. Q Q.5	Inappropriate spacing exists on the SPDS Critical Safety Function (CSF) Integrity display: the "AUCT LO T_c W/R" label and value are too close to the "cold overpressure limits" plot. This causes confusion as to the units on the plant operational limits trend plot and the title of the cold overpressure limits trend plot. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The CSF Integrity display is being revised to provide appropriate spacing.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1118 P_1-6.7.2.4 P_2-App. Q Q.4	The SPDS displays RCS subcooling with a negative value, while the EOPs consider RCS subcooling as having a positive value. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The SPDS display is being revised to suppress the minus sign and display the absolute value of subcooling, since the labels "SUBCOOL" and "SUPERHEAT" are provided. These revisions are being made throughout the computer system displays.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1119 P_1-6.7.2.5 6.7.2.6 P_2-11.1.1 11.1.2 App. Q Q.5 Q.6	The SPDS alarms are difficult to acknowledge. Failure of the operator to acknowledge the alarms voids the "reflash" feature of the annunciator. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The SPDS is being revised to group the SPDS alarms separately from the non-SPDS alarms to simplify acknowledgement.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1120 P_1-None P_2-11.1.3.3 11.2.5	The SPDS is complex in relation to the training frequency. Operators have difficulty remembering quality tag definitions, usage during ATWS and adverse containment events, safety function bar height meaning, etc. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The features of the SPDS are being simplified via resolution of the various HEDs against the SPDS (refer to HEDs 1108, 1109, 1111, 1116, 1118, 1121, and 1123). The quarterly training frequency is seen as appropriate for licensed reactor operators.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1121 P_1-6.7.2.7.k P_2-App. Q Q.7.K	The usage of color is inconsistent within the SPDS: on Normal Safety Function displays, parameters in alarm are yellow and magenta; on Critical Safety Function displays, parameters in alarm remain salmon. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The CSF status box color is determined using a status tree, which evaluates several parameters against setpoints in a logic tree calculation. The colors of the CSF parameter digital values and bars are being revised to show which parameters have resulted in the status box color. Additionally, the SPDS is being revised so that the NSF displays show alarm colors only when the NSF status boxes are being displayed, and similarly the CSF displays show alarm colors only when the CSF status boxes are being displayed. (This evaluation also resolves HED-1072, Category C.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1124 P_1-6.7.2.4.a 6.7.2.6 P_2-App. Q Q.4.A Q.6.B	The label "INOP" is displayed twice below "CNTMT ISOL STATUS" on the Normal Safety Function containment display, without further labeling. Lack of appropriate labeling causes confusion and an opportunity for misinterpretation. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The SPDS is being revised to add "CNTMT ISOl" and "CVI" labels. Thus, when a valve actuated by Containment Isolation Phase A signal becomes inoperable, a CNTMT ISOL INOP message is displayed. Similarly, when a valve actuated by the Containment Ventilation Isolation signal becomes inoperable, a CVI INOP message is displayed.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1125 P_1-6.7.2.5 6.7.2.6 P_2-App. Q Q.5 Q.6.B	The area under "CNTMT ISOL STATUS" on the Normal Safety Function Containment display is blank when Containment Isolation Phase A and Containment Ventilation Isolation signals are not present and no containment isolation valves receiving these signals are in Bypass/ Inop condition. This lack of information does not meet the requirement to provide clear and concise data to the operators. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The SPDS is being revised to provide clear and concise information to the operator regarding containment isolation valve Bypass/Inop and Fail-to-Actuate conditions. Containment isolation signals are also being provided on the display.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1126 P_1-6.7.2.5 6.7.2.7 P_2-App. Q Q.5 Q.7.B	Setpoints highlighted in the Critical Safety Function displays by arrows and dashed lines versus solid lines do not have consistent meaning to the operator. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The criterion has been established that only operator action points are shown on the CSF displays, and that these points are shown using arrows and dashed lines, with numerical values corresponding to the status trees. The SPDS displays have been modified to use arrows and dashed lines for operator action points on Unit 1 and are being so modified on Unit 2. The revision to use numerical values at arrows is being implemented. For the discussion of QDPS revisions, see Disposition Note CPT-1.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1127 P_1-6.7.2.5 P_2-App. Q Q.5	NIS channel values shown on the Normal Safety Function Subcriticality display are not located according to north/ south/east/west plant location around the core. The quadrant labels are not equivalent to RCS loop designations, which leads to confusion. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The SPDS display is being revised to include channel numbers and loop designations.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Panel Layout HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1043 P_1-6.8.1.1 P_2-6.5.1.1	The arrangement of the T_{avg}, T_h, T_c, and Delta-T meters for the reactor coolant loops on panel CP005, while appropriate for other needs, is not adequate for cross-loop comparisons of these parameters. Presentation of these parameters on a cross-loop basis is not provided on a computer display either. REF: OPERATOR OBSERVATION	An ERFDADS display shows loop comparisons of T_{avg}, T_h, T_c, and Delta-T. This display facilitates quick comparison of the same parameter across the four RCS loops. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Panel Layout HED CATEGORY C

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1142 P_1-6.8.2.2.a P_2-6.5.2.2	Valve position light displays for the MSR main steam purge valves currently show the MSR 11 valves below the MSR 12 valves. REF: OPERATOR OBSERVATION	The wiring to the valve position lights has been revised such that the numerical progression criteria are met, i.e., valve position lights for MSR 11 are above the valve position lights for MSR 12. Based on the above action, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

CATEGORY D HED DISPOSITIONS

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1029 S-138 P_1-6.1.2.5 P_2-App. A A.5	Controls are above 70 inches on panel CP022 for the Fuel Handling Building HVAC exhaust air flow controllers. REF: CATEGORY E EVALUATIONS	These flow controllers are infrequently used and operated. Location of controls above or below the recommended zone is a secondary concern to locating the controls on the appropriate panel. A small ladder has been provided to improve accessibility. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1088 P_1-6.1.5.5.b P_2-App. D D.1.4	During three-train emergency mode control room HVAC operation in Unit 1, noise levels reach 66 dB(A) at the entrance to the horseshoe area of the control room. Noise levels at other representative locations were below the 65 dB(A) criterion. (Refer to HED-1063, Category B.) (Unit 2 three-train noise levels have not been determined.) REF: CATEGORY E EVALUATIONS	Additional noise level measurements are planned with three trains of HVAC operating. Based on those measurements, the background noise level will be determined and the need for corrective action assessed.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1146 P_1-6.1.2.5.a P_2-App. A A.5.B	Some safety-related controls on the Auxiliary Shutdown Panel, or those which must be used during emergency operations, are located above 53 inches. REF: CATEGORY E EVALUATIONS	Due to the infrequent use of the ASP, no revisions are required. The operators can comfortably perform actions needed at the ASP, even though the placement of the controls does not meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1147 P_1-6.1.2.5.b P_2-App. A A.5.D	Some safety-related displays on the Auxiliary Shutdown Panel, or those which must be used during emergency operations, are located above 65 inches or below 50 inches. REF: CATEGORY E EVALUATIONS	Due to the infrequent use of the ASP, no revisions are required. The operators can comfortably perform actions needed at the ASP, even though the placement of the displays does not meet the criteria. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1148 P_1-6.1.1.4 P_2-6.1.1.4	Access to the documents required for Auxiliary Shutdown Panel operations requires two keys: one to open the door at the back of the ASP Room; one to open the cabinet containing the documents. Location of the documents is not indicated in the ASP Room, and some cabinet drawers are not labeled for contents. The quantity of documents per cabinet drawer makes the drawers difficult to open and caused the cabinet to tip. REF: CATEGORY E EVALUATIONS	Locks will be removed from the door at the back of the ASP Room and the cabinets, providing easy access to the documents. Access to the ASP Room itself continues to require a key. Labeling will be provided to identify the location of the documents and the contents of each cabinet drawer. Storage options will be investigated and appropriate storage provided.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1149 P_1-6.1.1.5 P_2-6.1.1.5	The Auxiliary Shutdown Panel Room does not contain the expendables needed for the ASP. REF: CATEGORY E EVALUATIONS	A supply of light bulbs (the only expendables required) will be provided at the ASP.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1151 P_1-6.1.5.2.b P_2-App. D D.1.1.C	A draft of 160 ft/min exists at the CRT workstation in the Unit 1 Auxiliary Shutdown Panel Room, exceeding the 45 ft/min criterion limit. REF: CATEGORY E EVALUATIONS	This HED remains under evaluation to determine final resolution. Rebalancing the EAB HVAC system may resolve this problem. (Air velocity measurements in the Unit 2 Auxiliary Shutdown Panel Room have shown no measurable airflow.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1152 P_1-6.1.5.3.e P_2-App. D D.1.2.E	Direct overhead lighting in the Auxiliary Shutdown Panel Room results in operator fatigue. REF: CATEGORY E EVALUATIONS	This HED will be evaluated with HED-1153 (Category D), concerning meter glare.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1153 P_1-6.1.5.3.f P_2-App. D D.1.2.G	Direct overhead lighting produces glare on the Auxiliary Shutdown Panel meters. REF: CATEGORY E EVALUATIONS	Alternatives for reducing glare will be considered. This HED remains under evaluation to determine final resolution.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Workspace HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1157 P_1-6.1.5.5.b P_2-App. D D.1.4.D	Background noise level at the Auxiliary Shutdown Panel exceeds the criteria limit of 65 dB(A), resulting in degraded operator performance due to auditory fatigue. REF: CATEGORY E EVALUATIONS	This discrepancy remains under evaluation to determine final disposition.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Communications HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1085 S-0255 P_1-6.6.1.1 P_2-7.3 6.4.1.2	The patch panels for the maintenance communication system do not have readily available information for tieing in several people at various locations. REF: CATEGORY E EVALUATIONS	Addition of labels to provide interconnection information at each patch panel will be evaluated as part of the plant modification process.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Communications HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1155 P_1-6.2.1.3 P_2-7.3	The location of the communications box in the Unit 1 Auxiliary Shutdown Panel Room results in congestion. REF: CATEGORY E EVALUATIONS	Reevaluation of the communications box location, to improve usability, will be performed as part of the plant modification process. The communications box in the Unit 2 ASP Room has been evaluated and is located appropriately.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Annunciator HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1092 P_1-6.3.3.3.e 6.6.5.1 P_2-None	Temporary identification (colored dots) has been added to the annunciator windows actuated via ERFDADS to distinguish these alarms in the event of ERFDADS failure or malfunction. REF: OPERATOR OBSERVATION	A "blue dot", indicating that the computer system is driving that window, will be engraved on each computer-driven annunciator window.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1001 P_1-6.4.1.2 P_2-6.2.1.6	After "quick release" of certain Microswitch switches, the switch may go past the center position and make up contacts for the opposite position of the switch. The switches involved are three-position switches, maintained in the right or left position and spring return to center from the other position. This accidental actuation may occur when the switch is turned to the spring return position and then released quickly. REF: ENGINEERING OBSERVATION	Training has been implemented to ensure that operators do not "quick release" the switches. Without the "quick release", the switch does not go past the center position and cause the reverse actuation. No further corrective action is required. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1090 P_1-6.4.2.2 P_2-6.2.1.10 App. S S.4.3	Color coding of J-handles on panel CP010 switches providing feeds to ESF bus transformers does not conform to the color coding criteria. REF: ENGINEERING OBSERVATION	Switch handles on panel CP010 have been replaced with black handles, conforming to the color coding criteria for switches. Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1093 P_1-6.4.3.3 P_2-App. E E.1.5.1	Pushbuttons for manual initiation of the Bypass/Inoperable Status Monitoring System do not meet the "closed-corner octagon" criterion for distinguishing legend pushbuttons from indicating lights. REF: ENGINEERING OBSERVATION	Reengraving of the pushbuttons to add closed corners, distinguishing them from indicating lights, will be evaluated as part of the plant modification process.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Controls HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1144 P_1-6.4.1.1.a P_2-6.2.1.1	Slow opening valves with small finger-operated controls are difficult to hold "actuated" for the time required for full valve stroke. Additionally, some valves are provided with jog control, with no obvious need for this type of circuit. REF: OPERATOR OBSERVATION	Alternatives for holding the control switch "actuated" will be evaluated to determine the appropriate resolution. Valves provided with jog control will be reevaluated to determine whether they actually need jog control. Where not required, the logic will be revised to a seal-in circuit.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1028 P_1-6.5.4.1 P_2-App. I I.4.F	The third pen on three-pen recorders is obscured by the scales.	Three-pen recorders have been replaced with recorders made by another manufacturer. These new recorders clearly show all three pens.
	REF: EOP VALIDATION REPORT APPENDIX A	Based on the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1076 P_1-6.5.1.2 6.5.1.3 P_2-App. F F.1 F.2	The alternate boric acid flow indicator has the first division at 30 GPM (log scale). This is the minimum required flow per Tech Specs and very hard to determine. REF: OPERATOR OBSERVATION	Investigation of this flow instrument loop scaling requirements, to determine an acceptable range that will provide readability for the minimum Tech Spec flow, will be performed as part of the plant modification process.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1104 P_1-6.5.1.5 P_2-App. F F.5	RCS pressure recorder PR-0406 has a range of 0-3000 psig, on a scale of 0 to 30 (psig x 100) with major division increments of 10. RCS pressure recorder PR-0407 has a range of 0-3500 psig, on a scale of 0 to 35 (psig x 100) with major division increments of 5. Since the recorders are adjacent to each other, the readings will be compared; the scales should be compatible in numerical progression and scale organization. REF: ENGINEERING OBSERVATION	The technical and licensing reasons for the different scales override the desirability to meet the human factors criteria. No corrective action is required. Based on the above, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1154 P_1-6.5.1.5.b P_2-App. F F.4.D	Meter scale dimension criteria are not met on smaller scales on the Auxiliary Shutdown Panel. REF: CATEGORY E EVALUATIONS	The smaller scales in question are part of controllers; the scales have been evaluated as adequately providing parameter indication. The criteria document will be revised to indicate that the smaller scales are appropriate in this application.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1091 P_1-6.6.6.4 6.5.1.6 P_2-App. N N.1.2 App. S S.4.G	Color coding of SI process mimic on panel CP001 does not conform to mimic color coding criteria. REF: ENGINEERING OBSERVATION	Use of mimic colors to differentiate ESF subsystems by train has been evaluated as effective as an aid to operators in differentiating train associated equipment on panel CP001. Criteria are being developed for the use of train-related color coding of mimics. The mimics in the control room will be modified in accordance with the revised criteria. (See also HED-1105, Category C.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Labels and Location Aids HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1100 P_1-6.6.6.1 6.6.6.2 6.6.1.1 P_2-App. N N.1.1 6.4.1.2	The ESF Status Monitoring test pushbutton on CP004 lacks a demarcation pad (darker color paint). The test pushbuttons on CP022 have labels indicating which is used for Bypass/Inop window test and which is used for Fail-to-Actuate window test. Such labels are not provided on other main control panels. REF: ENGINEERING OBSERVATION	Provision of a demarcation pad for the CP004 pushbutton and labels for all ESF Status Monitoring test pushbuttons will be evaluated as part of the plant modification process.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Visual Displays HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1137 P_1-6.5.1.1 6.5.1.2.b 6.6.3.2 P_2-6.3.1.2 App. F F.1 F.3.4 6.4.1.2 6.4.5	The main generator MVAR meter uses "IN/OUT" labeling, while system dispatcher uses terminology of "LEAD/LAG". REF: OPERATOR OBSERVATION	The main generator MVAR meter label has been revised to use "LEAD/LAG" terminology. Based upon the above actions, this HED is considered resolved for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1034 S-0825 P_1-6.7.2.4 P_2-App. Q Q.4.P	The titles for the Normal and Critical Safety Function displays on ERFDADS would be enhanced if the NSF/CSF letter designator were placed in brackets, e.g.: Present - HEAT SINK H Better - HEAT SINK [H] REF: CATEGORY E EVALUATIONS	The ERFDADS displays have been revised to put the NSF/CSF letter designator in brackets after the safety function. Based on the above actions, this HED is considered resolved for Unit 1. These same changes are being implemented for Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1035 P_1-6.7.14 P_2-App. P P.1	The ERFDADS keyboard is lettered in three lines. It is difficult to find the correct key since the same letter may appear on two of the lines. (The "shift" function should be differentiated from the "unshifted" function.) REF: CATEGORY E EVALUATIONS	The possibility of differentiating the "shift" function line from the "unshifted" function line will be investigated. (The top line is the "shift" function.) The keys may not be large enough to implement this recommendation.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1039 S-0853 P_1-6.7.2.4.k P_2-App. Q Q.4.K	Proteus displays are inconsistent in the use of periods at the end of a sentence or listing. (Procedure writer's guides sometimes encourage not using complete sentences and avoiding the use of periods.) REF: CATEGORY E EVALUATIONS	The STP criterion has been established as follows: Periods are to be used only at the end of a sentence. The computer displays will be reviewed for conformance to this criterion and revised as required.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1069 P_1-6.7.2.7 P_2-App. Q Q.7.K	Color codings on SPDS displays have different meanings in different places (trend graphs). REF: SPDS AUDIT	Refer to HED-1123, Category D. Based upon the opening of HED-1123, this HED is considered closed for Unit 1 and Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1071 P_1-6.7.1.4 P_2-App. P P.1	The ERFDADS function keys used for SPDS should be differentiated from the remaining keys. REF: SPDS AUDIT	Labeling provided on the SPDS keys is seen as adequate. Evaluations will be performed to determine possible means to highlight these keys as SPDS keys.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1073 P_1-6.7.2.7 P_2-App. Q Q.7.H App. L	Displays for QDPS and ERFDADS have been developed using the P&ID symbol for a cooler or heater, but without consistency in use of letters identifying the service or water source. REF: ENGINEERING OBSERVATION	The displays will be revised to show the symbol for a cooler or heater, without letters identifying the service or water source, in conformance to the criteria developed.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1074 P_1-6.7.2.4 P_2-App. Q Q.4.E	The displayed value sequence for RCS pressure in ERFDADS is different from QDPS. REF: ENGINEERING OBSERVATION	The ERFDADS display will be revised to conform with the QDPS display, which is designed to group the two sensors with the same range together.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1106 P-6.7.2.5 P_2-App. Q Q.5.A	Various changes are required on the ERFDADS display CV-02 to match the actual plant. REF: ENGINEERING OBSERVATION	The ERFDADS display CV-02 has been revised to more closely reflect the actual plant. Based on the above actions, this HED is considered resolved for Unit 1. These same changes are being implemented for Unit 2.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1110 P_1-6.7.2.5.n P_2-App. Q Q.5.N	The cursors on the SPDS Critical Safety Function Integrity "OPERATING" and "COLD OVERPRESSURE" trend displays are difficult to locate on the CRT. The size of each cursor is one pixel and is meant to show the current value in a trend plot. REF: SPDS MAIN-IN-THE-LOOP VALIDATION	This discrepancy remains under evaluation to determine final disposition.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1113 P_1-6.7.2.5 P_2-App. Q Q.5.C	On the SPDS NSF-Containment display the scale legend associated with containment temperature and pressure values can result in operator confusion and potential misreading of the values. REF: SPDS MAN-IN-THE-LOOP VALIDATION	The SPDS Normal Safety Function Containment display will be revised to move the "pressure" bar to the left hand side of the trend chart.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1114 P_1-6.7.2.4 P_2-11.1 App. Q Q.4.A	The lack of digital information makes accurate determination of the SPDS Normal Safety Function bar chart values difficult and time consuming. REF: SPDS MAN-IN-THE-LOOP VALIDATION	Digital values of parameters will be provided on the SPDS Normal Safety Function displays.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1122 P_1-6.7.2.4 6.6.3.3 P_2-App. Q Q.4 6.4.6 App. L	The acronym for breaker (BRK) appearing on the top level SPDS displays is inconsistent with the acronym for breaker (BKR) contained in the "STP Standard Acronyms List". REF: SPDS MAN-IN-THE-LOOP VALIDATION	The SPDS top level displays have been revised to change "BRK" to "BKR". Based on the above actions, this HED is considered resolved for Unit 2. These same changes are being implemented for Unit 1.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1123 P_1-6.7.2.7 P_2-App. Q Q.7.K	The SPDS uses some of the same colors for trends and bar chart alarms on the Normal Safety Function displays. Specifically, green and yellow are used for both purposes. REF: SPDS MAN-IN-THE-LOOP VALIDATION	Use of colors other than green, yellow and red will be investigated for use on trend graphs. (See also HED-1069, Category D.)

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Computers HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1136 P_1-6.7.2.4 6.6.3.3 P_2-App. Q Q.4 6.4.6 App. L	ERFDADS display MS-06 gives the main steam line radiation value units as "R/HR" and uses the values datalinked from QDPS, which are actually in uCi/cc instead. ERFDADS display RA-10 uses the RMS datalinked values for SG blowdown, which have units of mR/HR, but the display shows units of uCi/cc. REF: ENGINEERING OBSERVATION	Class 1E radiation monitor values are datalinked to ERFDADS from both QDPS and directly from the radiation monitoring system. Criteria are being developed to govern what input values will be used on each display. Following development of the criteria, the displays will be revised to conform to the criteria, and the proper units will be shown.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number

HF AREA Panel Layout HED CATEGORY D

SHEET NUMBER / REFERENCE PARAGRAPH	OBSERVATION OR CRITERIA TITLE	DISPOSITION
HED-1107 P_1-6.8.2.2 6.8.2.3 P_2-6.5.2.2 6.5.2.3	Pushbuttons for blocking the power range neutron flux low setpoint trip above P-10 are laid out vertically on panel CP005. The "S" train pushbutton is above the "R" train pushbutton. This arrangement is inconsistent with the source range block switches and the intermediate range block pushbuttons (also on CP005) and the normal top-to-bottom alphabetic layout arrangement. REF: OPERATOR OBSERVATION	The power range neutron flux low setpoint trip block pushbuttons, and their associated labels, will be reversed so that the "R" switch is above the "S" switch.

Note: Reference P_1 is NUREG-0700 Section 6 Number
P_2 is STP Criteria Report Number