

INDEPENDENT ORBITER ASSESSMENT

**ASSESSMENT OF THE
ELECTRICAL POWER
DISTRIBUTION AND CONTROL/
ELECTRICAL POWER
GENERATION SUBSYSTEM**

26 FEBRUARY 1988

MCDONNELL DOUGLAS ASTRONAUTICS COMPANY
HOUSTON DIVISION

SPACE TRANSPORTATION SYSTEM ENGINEERING AND OPERATIONS SUPPORT

WORKING PAPER NO. 1.0-WP-VA88003-33

INDEPENDENT ORBITER ASSESSMENT
ASSESSMENT OF THE EPD&C/EPG FMEA/CIL

26 FEBRUARY 1988

This Working Paper is Submitted to NASA under
Task Order No. VA88003, Contract NAS 9-17650

PREPARED BY: C. N. McCants
C.N. McCants
Analyst
Independent Orbiter
Assessment

PREPARED BY: M. Bearrow
M. Bearrow
Analyst
Independent Orbiter
Assessment

APPROVED BY: Kurt Schmeckpeper
Kurt Schmeckpeper
EPD&C Lead
Independent Orbiter
Assessment

APPROVED BY: Anthony J. Marino
A.J. Marino
Section Manager-FMEA/CIL
Independent Orbiter
Assessment

APPROVED BY: G.W. Knori
G.W. Knori
Technical Manager
Independent Orbiter
Assessment

APPROVED BY: Gordon Hornback
G.L. Hornback
Deputy Program Manager
STSEOS

CONTENTS

	Page
1.0 EXECUTIVE SUMMARY	1
2.0 INTRODUCTION	3
2.1 Purpose	3
2.2 Scope	3
2.3 Analysis Approach	3
2.4 Ground Rules and Assumptions	4
3.0 SUBSYSTEM DESCRIPTION	5
3.1 Design and Function	5
3.2 Interfaces and Locations	6
3.3 Hierarchy	6
4.0 ASSESSMENT RESULTS	12
4.1 Power Section Assembly (PSA)	14
4.2 Reactant Control Subsystem (RCS)	16
4.3 Thermal Control System (TCS)	20
4.4 Water Removal System (WRS)	24
4.5 Power Reactant Storage Distribution System (PRSDS)	28
5.0 REFERENCES	32
APPENDIX A ACRONYMS	A-1
APPENDIX B DEFINITIONS, GROUND RULES, AND ASSUMPTIONS	B-1
B.1 Definitions	B-2
B.2 Project Level Ground Rules and Assumptions	B-4
B.3 Subsystem Specific Ground Rules and Assumptions	B-6
APPENDIX C ASSESSMENT WORKSHEETS	C-1
APPENDIX D CRITICAL ITEMS	D-1
APPENDIX E ANALYSIS WORKSHEETS	E-1
APPENDIX F NASA FMEA TO IOA WORKSHEET CROSS REFERENCE/RECOMMENDATIONS	F-1

List of Figures

	Page
Figure 1 - EPD&C/EPG FMEA/CIL ASSESSMENT	2
Figure 2 - EPD&C/EPG SUBSYSTEM OVERVIEW	7
Figure 3 - EPG SUBSYSTEM OVERVIEW	8
Figure 4 - PRSDS SUBSYSTEM OVERVIEW	9
Figure 5 - EPDD&C/EPG HARDWARE LOCATION IN THE ORBITER VEHICLE	10
Figure 6 - EPD&C/EPG INTERFACES	11

List of Tables

	Page
Table I - SUMMARY OF IOA FMEA ASSESSMENT ISSUES	12
Table II - SUMMARY OF IOA CIL ASSESSMENT ISSUES	12
Table III - SUMMARY OF IOA RECOMMENDED FAILURE CRITICALITIES	12
Table IV - SUMMARY OF IOA RECOMMENDED CRITICAL ITEMS	13
Table V - IOA WORKSHEET NUMBERS IOA FMEA ASSESSMENT	13
Table VII - POWER SECTION ASSEMBLY - SUMMARY OF IOA CIL ASSESSMENT	14
Table VIII - POWER SECTION ASSEMBLY - SUMMARY OF IOA RECOMMENDED FAILURE CRITICALITIES	15
Table IX - POWER SECTION ASSEMBLY - SUMMARY OF IOA RECOMMENDED CRITICALS ITEMS	15
Table X - REACTANT CONTROL SUBSYSTEM - SUMMARY OF IOA FMEA ASSESSMENT	16
Table XI - REACTANT CONTROL SUBSYSTEM - SUMMARY OF IOA CIL ASSESSMENT	16
Table XII - REACTANT CONTROL SUBSYSTEM - SUMMARY OF IOA RECOMMENDED FAILURE CRITICALITIES	17
Table XIII - REACTANT CONTROL SUBSYSTEM - SUMMARY OF IOA RECOMMENDED CRITICALS ITEMS	17
Table XIV - THERMAL CONTROL SUBSYSTEM - SUMMARY OF IOA FMEA ASSESSMENT	18
Table XV - THERMAL CONTROL SUBSYSTEM - SUMMARY OF IOA CIL ASSESSMENT	18
Table XVI - THERMAL CONTROL SUBSYSTEM - SUMMARY OF IOA RECOMMENDED FAILURE CRITICALITIES	19
Table XVII - THERMAL CONTROL SUBSYSTEM - SUMMARY OF IOA RECOMMENDED CRITICALS ITEMS	19
Table XVIII - WATER REMOVAL SUBSYSTEM - SUMMARY OF IOA FMEA ASSESSMENT	20
Table XIX - WATER REMOVAL SUBSYSTEM - SUMMARY OF IOA CIL ASSESSMENT	20
Table XX - WATER REMOVAL SUBSYSTEM - SUMMARY OF IOA RECOMMENDED FAILURE CRITICALITIES	21
Table XXI - WATER REMOVAL SUBSYSTEM - SUMMARY OF IOA RECOMMENDED CRITICALS ITEMS	21

List of Tables (continued)

	Page
Table XXII - POWER REACTANT STORAGE AND DISTRIBUTION SYSTEM - SUMMARY OF FMEA ASSESSMENT	22
Table XXIII - POWER REACTANT STORAGE AND DISTRIBUTION SYSTEM - SUMMARY OF IOA CIL ASSESSMENT	22
Table XXIV - POWER REACTANT STORAGE AND DISTRIBUTION SYSTEM - SUMMARY OF IOA RECOMMENDED FAILURE CRITICALITIES	23
Table XXV - POWER REACTANT STORAGE AND DISTRIBUTION SYSTEM - SUMMARY OF IOA RECOMMENDED CRITICAL ITEMS	23

Independent Orbiter Assessment
Assessment of the EPD&C/EPG FMEA/CIL

1.0 EXECUTIVE SUMMARY

The McDonnell Douglas Astronautics Company (MDAC) was selected in June 1986 to perform an Independent Orbiter Assessment (IOA) of the Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL). Direction was given by the STS Orbiter and GFE Projects Office to perform the hardware analysis using the instructions and ground rules defined in NSTS 22206, Instructions for Preparation of FMEA and CIL, 10 October 1986.

The IOA effort first completed an analysis of the Electrical Power Distribution and Control/Electrical Power Generation (EPD&C/EPG) hardware, generating draft failure modes and potential critical items. To preserve independence, this analysis was accomplished without reliance upon the results contained within the NASA FMEA/CIL documentation. The IOA results were then compared to the NASA FMEA/CIL baseline with proposed Post 51-L updates included. A resolution of each discrepancy from the comparison was provided through additional analysis as required. This report documents the results of that comparison for the Orbiter EPD&C/EPG hardware.

The IOA product for the EPD&C/EPG analysis consisted of two hundred sixty three failure mode "worksheets" that resulted in forty-two potential critical items being identified. Comparison was made to the NASA baseline (as of 1 January 1988) which consisted of 211 FMEAS and 47 CIL items. The comparison determined if there were any results which had been found by the IOA but were not in the NASA baseline. This comparison produced agreement on all FMEAS. Figure 1 presents a comparison of the Post 51-L baseline, with the IOA recommended baseline, and any issues.

The differences between the NASA and IOA FMEA/CIL totals are due to the process used to assign the failure modes. The IOA analysis assigned failure modes at the component level whereas, the NASA assigned failure modes to the circuit level. After the comparison, it was determined there were no discrepancies that were not already identified by NASA.

EPD&C / EPG ASSESSMENT OVERVIEW

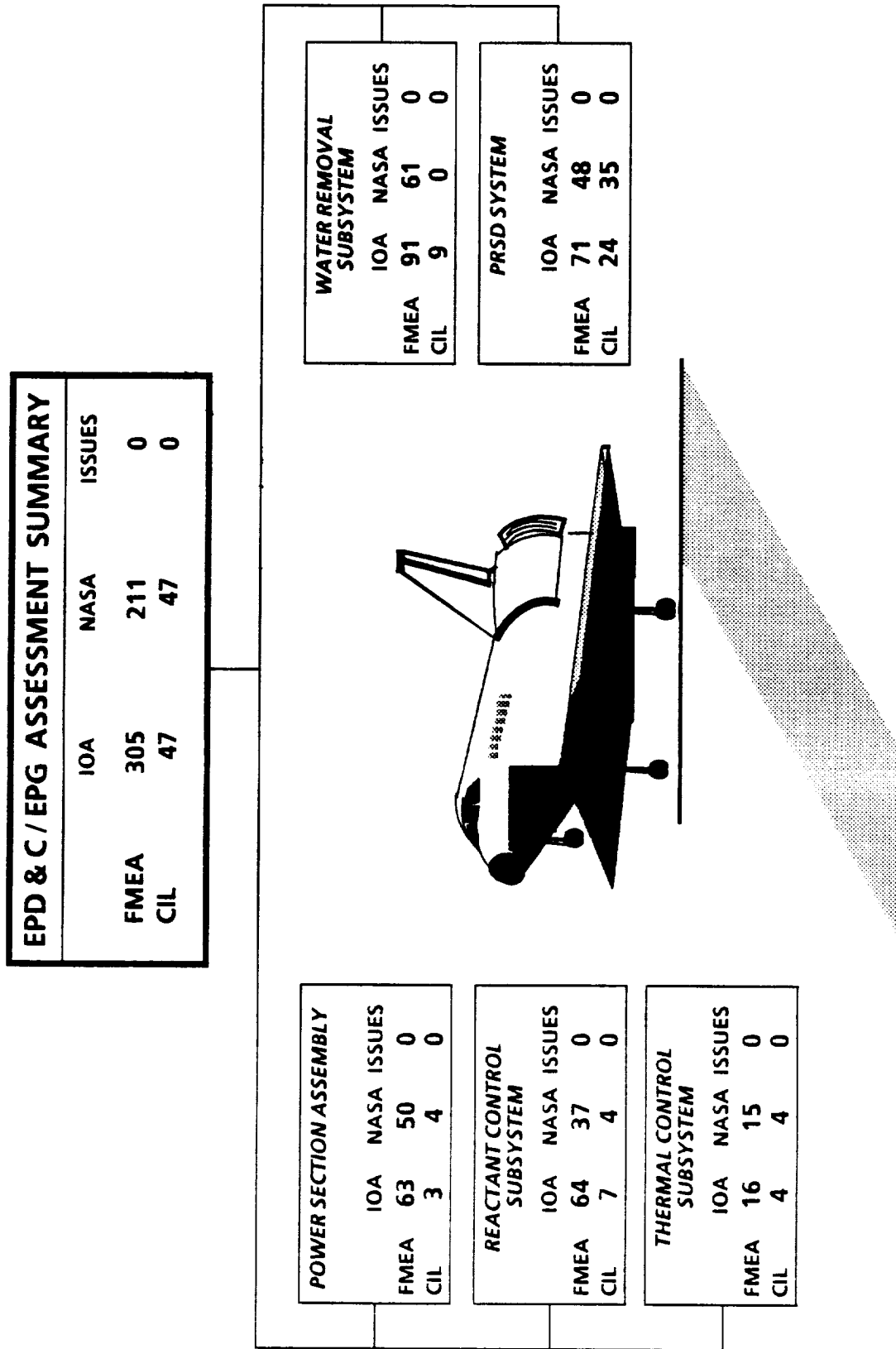


Figure 1 - EPD&C/EPG FMEA/CIL ASSESSMENT OVERVIEW

2.0 INTRODUCTION

2.1 Purpose

The 51-L Challenger accident prompted the NASA to readdress safety policies, concepts, and rationale being used in the National Space Transportation System (NSTS). The NSTS Office has undertaken the task of reevaluating the FMEA/CIL for the Space Shuttle design. The MDAC is providing an independent assessment of the proposed Post 51-L Orbiter FMEA/CIL for completeness and technical accuracy.

2.2 Scope

The scope of the independent FMEA/CIL assessment activity encompasses those Shuttle Orbiter subsystems and GFE hardware identified in the Space Shuttle Independent FMEA/CIL Assessment Contractor Statement of Work. Each subsystem analysis addresses hardware, functions, internal and external interfaces, and operational requirements for all mission phases.

2.3 Analysis Approach

The independent analysis approach is a top-down analysis utilizing as-built drawings to breakdown the respective subsystem into components and low-level hardware items. Each hardware item is evaluated for failure mode, effects, and criticality. These data are documented in the respective subsystem analysis report, and are used to assess the proposed Post 51-L NASA and Prime Contractor FMEA/CIL. The IOA analysis approach is summarized in the following Steps 1.0 through 3.0. Step 4.0 summarizes the assessment of the NASA and Prime Contractor FMEA/CIL which is documented in this report.

Step 1.0 Subsystem Familiarization

- 1.1 Define subsystem functions
- 1.2 Define subsystem components
- 1.3 Define subsystem specific ground rules and assumptions

Step 2.0 Define subsystem analysis diagram

- 2.1 Define subsystem
- 2.2 Define major assemblies
- 2.3 Develop detailed subsystem representations

Step 3.0 Failure events definition

- 3.1 Construct matrix of failure modes
- 3.2 Document IOA analysis results

Step 4.0 Compare IOA analysis data to NASA FMEA/CIL

4.1 Resolve differences

4.2 Review in-house

4.3 Document assessment issues

4.4 Forward findings to Project Manager

2.4 Ground Rules and Assumptions

The ground rules and assumptions used in the IOA are defined in Appendix B.

3.0 SUBSYSTEM DESCRIPTION

3.1 Design and Function

The EPD&C/EPG consists of hardware that is required for the command and control of electrical power generation, FC operation, and cryogenic reactant distribution and control in the Orbiter. The EPD&C/EPG consists of the following divisions:

1. The Power Section Assembly (PSA) utilizes the cryogenic reactants to produce the necessary electrical power for the Orbiter. By-products of this reaction include excess water and heat. The PSA is composed of cell plates, pressure plates, heater/insulator plates, and cell voltage harnesses. Each stack contains ninety-six cell plates grouped into three substacks connected in series. Analog data outputs from each cell are transmitted to the Orbiter via a cell performance monitor.
2. The Reactant Control Subsystem (RCS) heats the cryogenic reactants from the PRSDS to an acceptable temperature for use in the PSA. The RCS delivers reactants and controls the pressure within the cell plates. Purging of the inert gases from the reactant lines is provided along with the circulation of hydrogen for excess water removal from the PSA. The RCS is composed of preheaters, reactant regulator, hydrogen pump-separator, condenser, and reactant purge/vent lines.
3. The Thermal Control System (TCS) controls operating temperatures and electrolyte concentration in the PSA. Waste heat is used to condense water vapor. Heat is also transferred to the preheaters for the reactant gases and rejected via the Orbiter vehicle cooling system.
4. The Water Removal Subsystem (WRS) removes product water from the PSA during normal operation. The excess water is produced from water vapor which is converted to a liquid by the condenser. The WRS delivers the water to the Orbiter vehicle potable water storage system or to the water relief line. The WRS consists of the condenser, hydrogen pump-separator, water trap, water discharge line, and water purity sensor.
5. The Power Reactant Storage and Distribution System (PRSDS) stores the cryogenic reactants (hydrogen and oxygen) for use in the production of electrical power in the fuel cells. The PRSDS can be configured to include up to five tanks of each of the reactant gases.

Each tank contains redundant heating elements and sensors to maintain the gases at the proper pressure. The PRSDS also provides gases to the Environmental Control and Life Support System (ECLSS).

3.2 Interfaces and Locations

The elements of the EPD&C/EPG are installed in the mid-body of the Orbiter vehicle beneath the payload bay liner. Each of the three fuel cells are located in the forward part of the bay, with FCP 1 on the left-hand side, with FCP 2 and FCP 3 located forward and aft, respectively on the right-hand side. Each of the PRSDS cryogenic reactant storage tanks are located along the outer edges of the payload bay under the liner. Cryogenic reactants (oxygen and hydrogen) are transferred on demand to the FCP and oxygen is transported directly to the ECLSS. Crew command and control is achieved via switches, circuit breakers, or meters located in the Orbiter cabin. Product water from the PSA is transported to the ECLSS for storage and waste heat is rejected to the cooling system. Three-phase AC electrical power is received from the Orbiter by the FCP to power the coolant pump, hydrogen pump-separator, and the water purity sensor. DC power generated by the FCP is distributed by the EPD&C. Reference Figure 5.

3.3 Hierarchy

Figure 2 illustrates the hierarchy of the EPD&C/EPG hardware and the corresponding subcomponents. Figures 3 through 6 comprise the detailed system representation.

ELECTRICAL POWER DISTRIBUTION AND CONTROL/ELECTRICAL POWER GENERATION SUBSYSTEM OVERVIEW

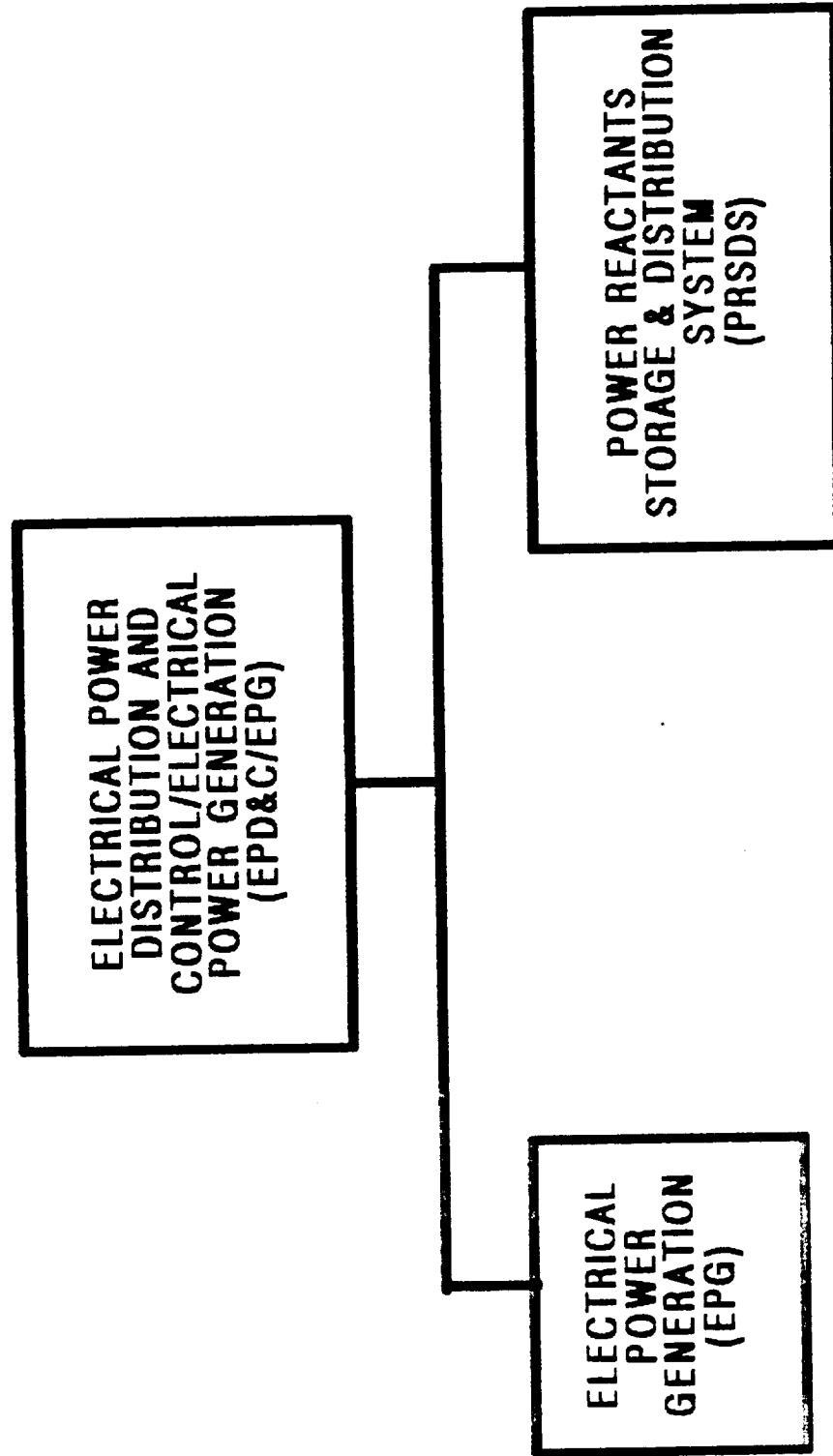


Figure 2 - EPD&C/EPG SUBSYSTEM OVERVIEW

ELECTRICAL POWER GENERATION SUBSYSTEM OVERVIEW

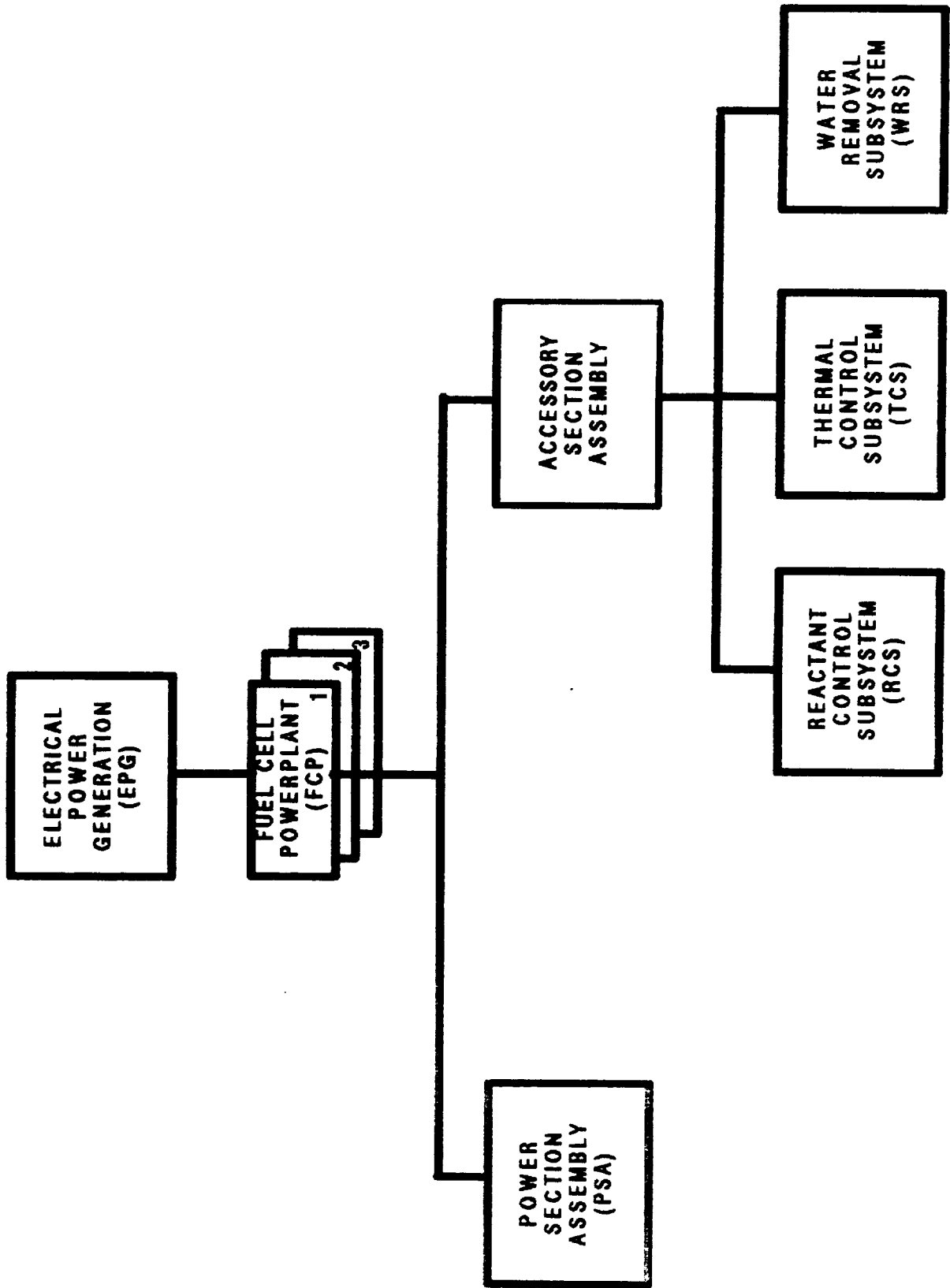
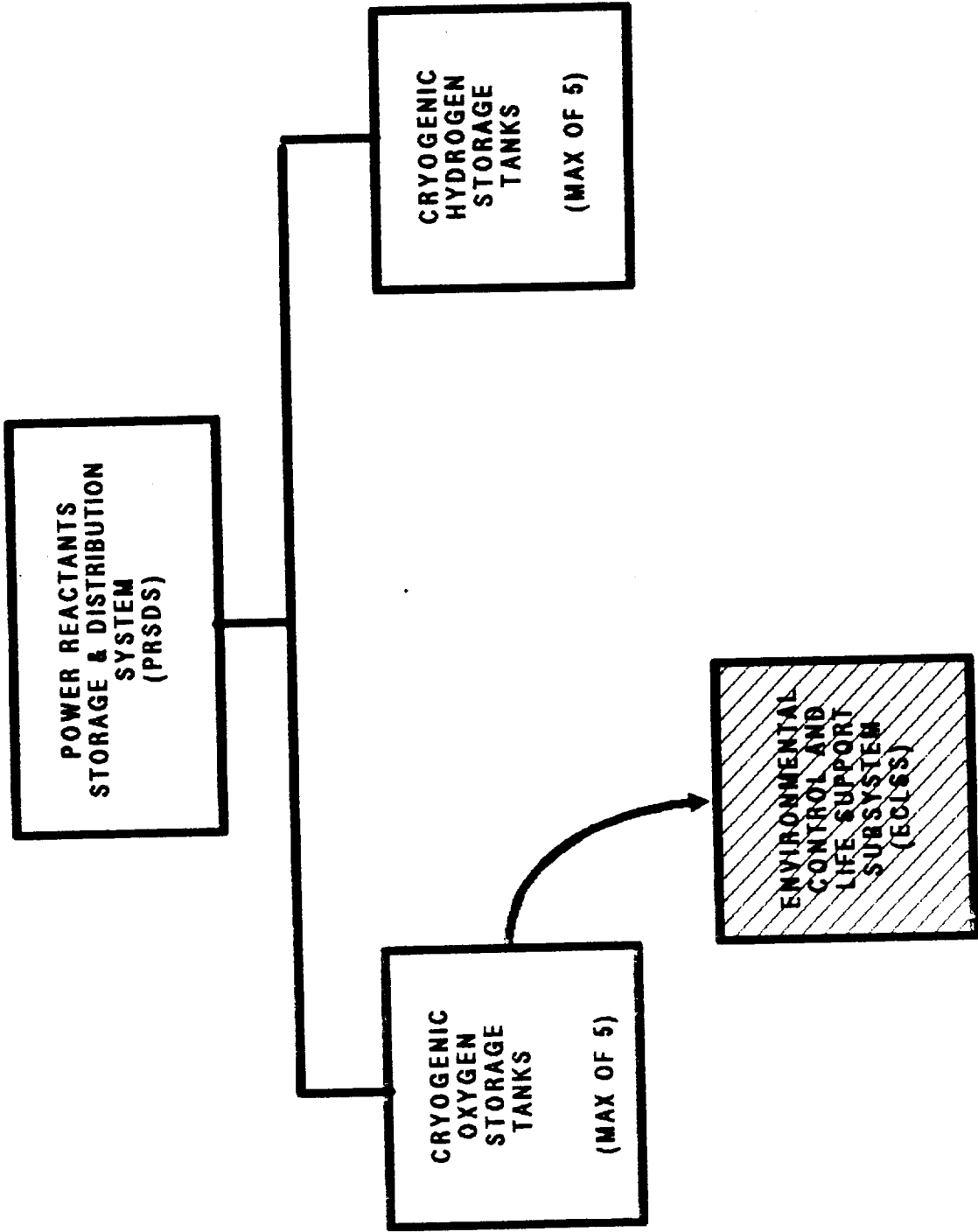


Figure 3 - EPG SUBSYSTEM OVERVIEW

POWER REACTANTS STORAGE & DISTRIBUTION SUBSYSTEM OVERVIEW



 EPD&C/EPG INTERFACE BUT NOT CONSIDERED IN THIS ANALYSIS

Figure 4 - PRSDS SUBSYSTEM OVERVIEW

EPD&C/EPG HARDWARE LOCATION IN THE ORBITER VEHICLE

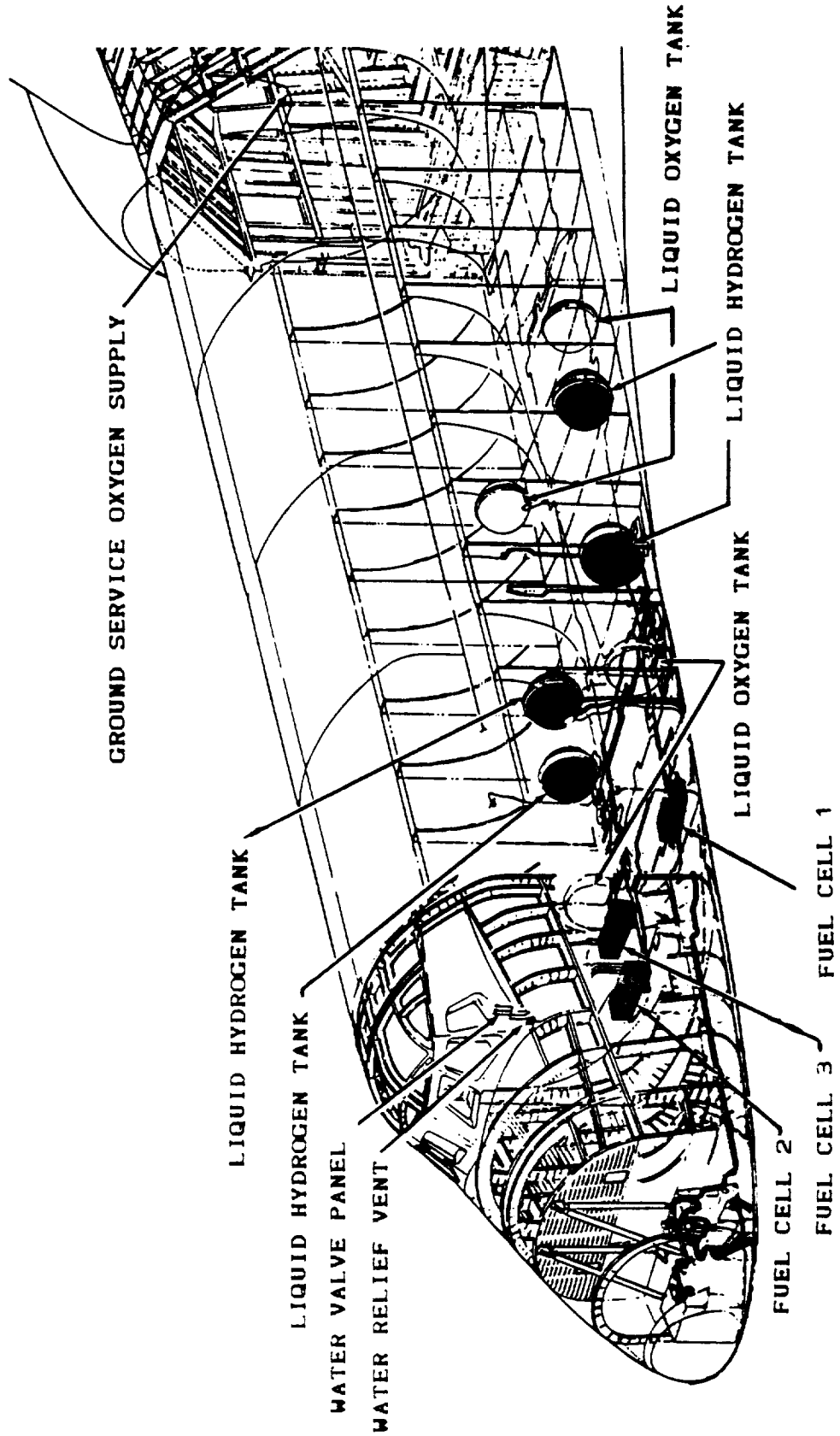


Figure 5 - EPD&C/EPG HARDWARE LOCATION IN THE ORBITER VEHICLE

ORIGINAL PAGE IS
OF POOR QUALITY

EPD&C/EPG INTERFACES

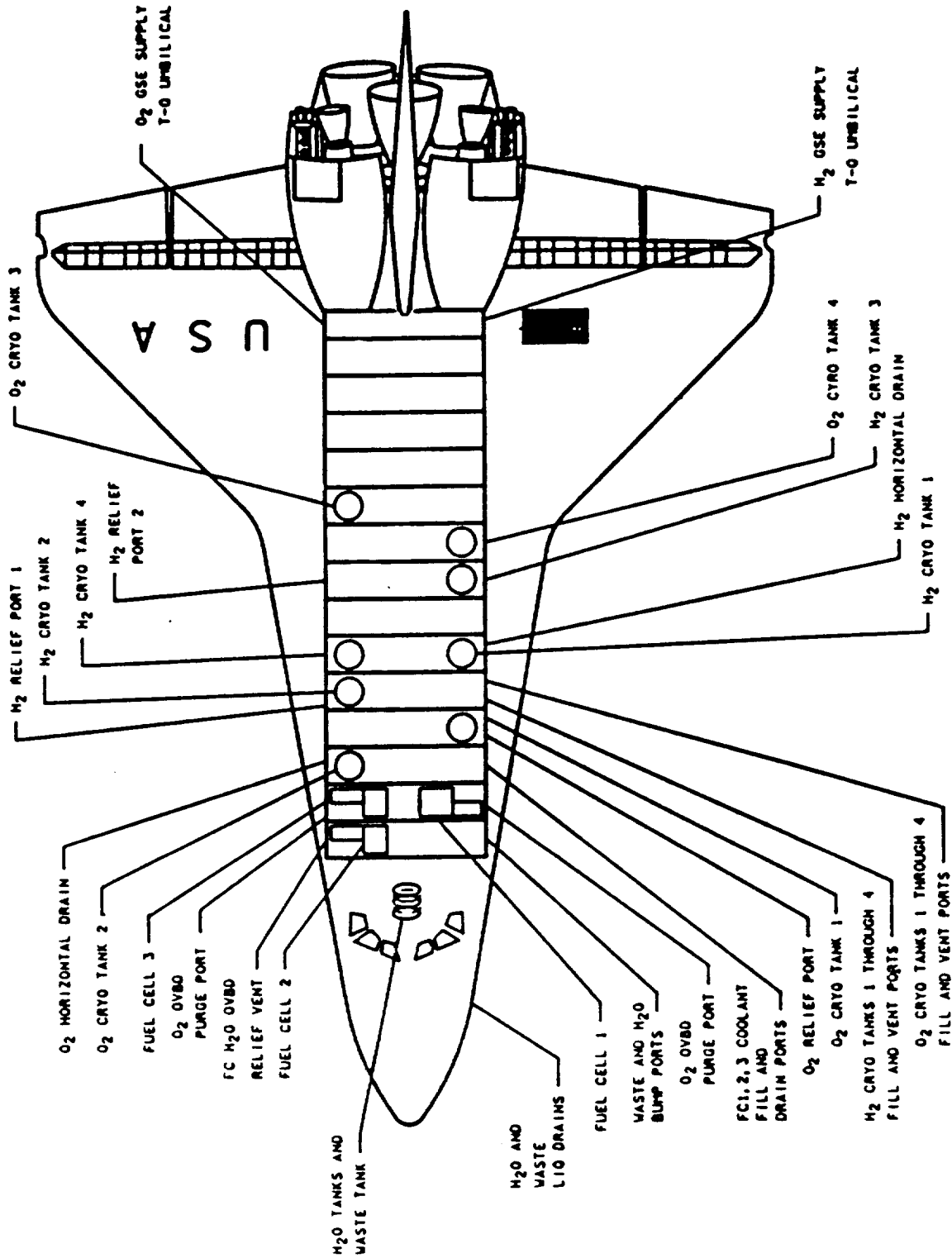


Figure 6 - EPD&C/EPG INTERFACES

4.0 ASSESSMENT RESULTS

The IOA analysis of the EPD&C/EPG hardware initially generated two hundred sixty three failure mode worksheets and identified sixty Potential Critical Items (PCIs) before starting the assessment process. In order to facilitate the comparison, forty-two additional failure mode analysis worksheets were generated. These analysis results were compared to the proposed NASA Post 51-L baseline of 211 FMEAs and 47 CIL items, which was generated using the NSTS 22206 FMEA/CIL instructions. Upon completion of the assessment, all of the 211 FMEAs were in agreement. The difference in the total number of FMEAs between IOA and NASA is due to the analysis level used to assign the failure modes.

A summary of the quantity of NASA FMEAs assessed, versus the recommended IOA baseline, and any issues identified is presented in Table I.

Table I Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
ALL	211	305	0

A summary of the quantity of NASA CIL items assessed, versus the recommended IOA baseline, and any issues identified is presented in Table II.

Table II Summary of IOA CIL Assessment			
Component	NASA	IOA	Issues
ALL	47	47	0

Table III presents a summary of IOA recommended failure criticalities for the EPD&C/FCP subsystem for the Post 51-L FMEA baseline.

Table III Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
Number :	4	44	0	110	26	121	305

Table IV presents a summary of the IOA recommended CIL items for the EPD&C/FCP subsystem for the Post 51-L baseline.

Table IV Summary of IOA Recommended Critical Items							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
Number :	4	33	0	5	3	3	47

Appendix C presents the detailed assessment worksheets for each failure mode identified and assessed.

Appendix D highlights the NASA Critical Items and corresponding IOA worksheet ID.

Appendix E contains new IOA analysis worksheets that cover failure modes that were not included in the original analysis. These worksheets were added in order to make a comparison with the NASA FMEAs on these failure modes.

Appendix F provides a cross reference between the NASA FMEA and corresponding IOA worksheet(s). IOA recommendations are also summarized.

The scheme for assigning IOA assessment (Appendix C) and analysis (Appendix E) worksheet numbers is shown in Table V.

Table V IOA Worksheet Numbers	
Component	IOA ID Number
1. PSA	2000 TO 2052, 2283X, 2285X TO 2288X
2. RCS	2053 TO 2117, 2280X
3. TCS	2118 TO 2131, 2207
4. WRS	2132 TO 2206, 2289X TO 2302X
5. PRSDS	2221 TO 2278, 2310X TO 2315X, 2352X TO 2353X

The five categories are discussed in the following sections along with issues, and the recommendations for the Post 51-L FMEA/CIL.

4.1 ASSESSMENT RESULTS - POWER SECTION ASSEMBLY (PSA)

The seven components included in this category are diodes, event indicators (EI), hybrid driver controllers (HDC), meters, resistors, signal conditioners (SC), and switches. A summary of the quantity of NASA FMEAs assessed for the Power Section Assembly versus the recommended baseline, and any issues identified is presented in Table VI.

Component	NASA	IOA	Issues
1. DIODES	4	8	0
2. EI	7	7	0
3. HDC	4	4	0
4. METER	1	2	0
5. RESISTOR	14	17	0
6. SC	9	11	0
7. SWITCH	11	14	0
TOTAL	50	63	0

The comparison made between the NASA baseline and the IOA product for the Power Section Assembly resulted in no issues. The thirteen additional IOA FMEAs are the results of the level of analysis. In some cases, IOA's analysis were written at the component level whereas the NASA FMEAs were written at the circuit level. This difference in analysis level resulted in the difference in the total FMEAs defined but due to the criticalities assigned there were no issues.

A summary of the quantity of NASA CILs assessed for the Power Section Assembly (PSA) versus the recommended IOA baseline, and any issues identified is presented in Table VII.

Component	NASA	IOA	Issues
1. DIODES	0	0	0
2. EI	0	0	0
3. HDC	1	0	0
4. METER	0	0	0
5. RESISTOR	1	1	0
6. SC	0	0	0
7. SWITCH	2	2	0
TOTAL	4	3	0

Table VIII presents a summary of the IOA recommended failure criticalities for the Power Section Assembly for the Post 51-L FMEA baseline.

TABLE VIII POWER SECTION ASSEMBLY Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. DIODES	0	0	0	1	0	7	8
2. EI	0	0	0	1	0	6	7
3. HDC	0	0	0	3	0	1	4
4. METER	0	0	0	0	0	2	2
5. RESISTOR	0	1	0	4	0	12	17
6. SC	0	0	0	0	0	11	11
7. SWITCH	0	1	0	7	1	5	14
TOTAL	0	2	0	16	1	44	63

Table IX presents a summary of the IOA recommended CIL items for the Power Section Assembly (PSA) for the Post 51-L baseline.

TABLE IX POWER SECTION ASSEMBLY Summary of IOA Recommended Critical Items							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. DIODES	0	0	0	0	0	0	0
2. EI	0	0	0	0	0	0	0
3. HDC	0	0	0	0	0	0	0
3. METER	0	0	0	0	0	0	0
4. RESISTOR	0	1	0	0	0	0	1
5. SC	0	0	0	0	0	0	0
6. SWITCH	0	1	0	1	0	0	2
TOTAL	0	2	0	1	0	0	3

4.2 ASSESSMENT RESULTS - REACTANT CONTROL SUBSYSTEM (RCS)

The seven components included in this category are circuit breakers (CB), diodes, fuses, hybrid driver controllers (HDC), remote power controllers (RPC), resistors, switches. A summary of the quantity of NASA FMEAs assessed for the Reactant Control Subsystem the recommended baseline, and any issues identified is presented in Table X.

TABLE X REACTANT CONTROL SUBSYSTEM (RCS) Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
1. CB	2	4	0
2. DIODES	6	6	0
3. FUSE	5	5	0
4. HDC	4	12	0
5. RPC	4	8	0
6. RESISTOR	10	23	0
7. SWITCH	6	6	0
TOTAL	37	64	0

The comparison made between the NASA baseline and the IOA product for the Reactant Control Subsystem resulted in no issues. The twenty-seven additional IOA FMEAs are the results of the level of analysis. In some cases, IOA's analysis were written at the component level whereas the NASA FMEAs were written at the circuit level. This difference in analysis level resulted in the difference in the total FMEAs defined but due to the criticalities assigned there were no issues.

A summary of the quantity of NASA CILs assessed for the Reactant Control Subsystem (RCS) versus the recommended IOA baseline, and any issues identified is presented in Table XI.

TABLE XI REACTANT CONTROL SUBSYSTEM Summary of IOA CIL Assessment			
Component	NASA	IOA	Issues
1. CB	1	1	0
2. DIODES	0	0	0
3. FUSE	0	0	0
4. HDC	2	6	0
5. RPC	0	0	0
6. RESISTOR	0	0	0
7. SWITCH	1	0	0
TOTAL	4	7	0

Table XII presents a summary of the IOA recommended failure criticalities for the Reactant Control Subsystem for the Post 51-L FMEA baseline.

TABLE XII REACTANT CONTROL SUBSYSTEM Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. CB	0	0	0	4	0	0	4
2. DIODES	0	0	0	1	2	3	6
3. FUSE	0	0	0	4	1	0	5
4. HDC	0	0	0	3	6	3	12
5. RPC	0	0	0	0	4	4	8
6. RESISTOR	0	0	0	2	10	11	23
7. SWITCH	0	0	0	2	2	2	6
TOTAL	0	0	0	16	25	23	64

Table XIII presents a summary of the IOA recommended CIL items for the Reactant Control Subsystem (RCS) for the Post 51-L baseline.

TABLE XIII REACTANT CONTROL SUBSYSTEM Summary of IOA Recommended Critical Items							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. CB	0	0	0	1	0	0	1
2. DIODES	0	0	0	0	0	0	0
3. FUSE	0	0	0	0	0	0	0
4. HDC	0	0	0	0	3	3	6
5. RPC	0	0	0	0	0	0	0
6. RESISTOR	0	0	0	0	0	0	0
7. SWITCH	0	0	0	0	0	0	0
TOTAL	0	0	0	1	3	3	7

4.3 ASSESSMENT RESULTS - THERMAL CONTROL SUBSYSTEM (TCS)

The four components included in this category are diodes, fuses, hybrid driver controllers (HDC), resistors. A summary of the quantity of NASA FMEAs assessed for the Thermal Control Subsystem versus the recommended baseline, and any issues identified is presented in Table XIV.

TABLE XIV THERMAL CONTROL SUBSYSTEM (TCS) Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
1. DIODES	2	2	0
2. FUSE	1	1	0
3. HDC	8	8	0
4. RESISTOR	4	5	0
TOTAL	15	16	0

The comparison made between the NASA baseline and the IOA product for the Thermal Control Subsystem resulted in no issues. The one additional IOA FMEAs are the results of the level of analysis. In some cases, IOA's analysis were written at the component level whereas the NASA FMEAs were written at the circuit level. This difference in analysis level resulted in the difference in the total FMEAs defined but due to the criticalities assigned there were no issues.

A summary of the quantity of NASA CILs assessed for the Thermal Control Subsystem (TCS) versus the recommended IOA baseline, and any issues identified is presented in Table XV.

TABLE XV THERMAL CONTROL SUBSYSTEM Summary of IOA CIL Assessment			
Component	NASA	IOA	Issues
1. DIODES	1	1	0
2. FUSE	1	1	0
3. HDC	1	1	0
4. RESISTOR	1	1	0
TOTAL	4	4	0

Table XVI presents a summary of the IOA recommended failure criticalities for the Thermal Control Subsystem for the Post 51-L FMEA baseline.

TABLE XVI THERMAL CONTROL SUBSYSTEM Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. DIODES	0	1	0	0	0	1	2
2. FUSE	0	1	0	0	0	0	1
3. HDC	0	1	0	1	0	6	8
4. RESISTOR	0	1	0	0	0	4	5
TOTAL	0	4	0	1	0	11	16

Table XVII presents a summary of the IOA recommended CIL items for the Thermal Control Subsystem (TCS) for the Post 51-L baseline.

TABLE XVII THERMAL CONTROL SUBSYSTEM Summary of IOA Recommended Critical Items							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. DIODES	0	1	0	0	0	0	1
2. FUSE	0	1	0	0	0	0	1
3. HDC	0	1	0	0	0	0	1
4. RESISTOR	0	1	0	0	0	0	1
TOTAL	0	4	0	0	0	0	4

4.4 ASSESSMENT RESULTS - WATER REMOVAL SUBSYSTEM (WRS)

The seven components included in this category are diodes, fuses, hybrid driver controllers (HDC), reference junctions (RJ), resistors, switches, temperature controllers (TC). A summary of the quantity of NASA FMEAs assessed for the Water Removal Subsystem versus the recommended baseline, and any issues identified is presented in Table XVIII.

Component	NASA	IOA	Issues
1. DIODES	8	8	0
2. FUSE	10	22	0
3. HDC	18	32	0
4. RJ	4	4	0
5. RESISTOR	2	3	0
6. SWITCH	10	10	0
7. TC	9	11	0
TOTAL	61	91	0

The comparison made between the NASA baseline and the IOA product for the Water Removal Subsystem resulted in no issues. The twenty-nine additional IOA FMEAs are the results of the level of analysis. In some cases, IOA's analysis were written at the component level whereas the NASA FMEAs were written at the circuit level. This difference in analysis level resulted in the difference in the total FMEAs defined but due to the criticalities assigned there were no issues.

A summary of the quantity of NASA CIL assessed for the Water Removal Subsystem (WRS) versus the recommended IOA baseline, and any issues identified is presented in Table XIX.

Component	NASA	IOA	Issues
1. DIODES	0	0	0
2. FUSE	0	3	0
3. HDC	0	3	0
4. RJ	0	0	0
5. RESISTOR	0	0	0
6. SWITCH	0	1	0
7. TC	0	2	0
TOTAL	0	9	0

Table XX presents a summary of the IOA recommended failure criticalities for the Water Removal Subsystem for the Post 51-L FMEA baseline.

TABLE XX WATER REMOVAL SUBSYSTEM Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. DIODES	0	0	0	3	0	5	8
2. FUSE	0	7	0	14	0	1	22
3. HDC	0	9	0	8	0	15	32
4. RJ	0	0	0	2	0	2	4
5. RESISTOR	0	0	0	0	0	3	3
6. SWITCH	0	1	0	4	0	5	10
7. TC	0	2	0	5	0	4	11
TOTAL	0	19	0	36	0	36	91

Table XXI presents a summary of the IOA recommended CIL items for the Water Removal Subsystem (WRS) for the Post 51-L baseline.

TABLE XXI WATER REMOVAL SUBSYSTEM Summary of IOA Recommended Critical Items							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. DIODES	0	0	0	0	0	0	0
2. FUSE	0	3	0	0	0	0	3
3. HDC	0	3	0	0	0	0	3
4. RJ	0	0	0	0	0	0	0
5. RESISTOR	0	0	0	0	0	0	0
6. SWITCH	0	1	0	0	0	0	1
7. TC	0	2	0	0	0	0	2
TOTAL	0	9	0	0	0	0	9

4.5 ASSESSMENT RESULTS - POWER REACTANTS STORAGE AND DISTRIBUTION SYSTEM

The ten components included in this category are current level detectors (CLD), diodes, hybrid driver controllers (HDC), remote power controllers (RPC), resistors, switches, valves. A summary of the quantity of NASA FMEAs assessed for the Power Reactants Storage and Distribution System versus the recommended baseline, and any issues identified is presented in Table XXII.

TABLE XXII POWER REACTANTS STORAGE AND DISTRIBUTION SYSTEM Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
1. CLD	2	2	0
2. DIODE	4	4	0
3. HDC	8	8	0
4. RPC	4	4	0
5. RESISTOR	1	2	0
6. SWITCH	10	18	0
7. VALVE	19	33	0
TOTAL	48	71	0

The comparison made between the NASA baseline and the IOA product for the Power Reactants Storage and Distribution System (PRSDS) resulted in no issues. The twenty-three additional IOA FMEAs are the results of the level of analysis. In some cases, IOA's analysis were written at the component level whereas the NASA FMEAs were written at the circuit level. This difference in analysis level resulted in the difference in the total FMEAs defined but due to the criticalities assigned there were no issues.

A summary of the quantity of NASA CILs assessed for the Power Reactants Storage and Distribution System versus the recommended IOA baseline, and any issues identified is presented in Table XXIII.

TABLE XXIII POWER REACTANTS STORAGE AND DISTRIBUTION SYSTEM Summary of IOA CIL Assessment			
Component	NASA	IOA	Issues
1. CLD	0	0	0
2. DIODE	2	2	0
3. HDC	4	5	0
4. RPC	2	1	0
5. RESISTOR	1	1	0
6. SWITCH	13	15	0
7. VALVE	13	0	0
TOTAL	35	24	0

Table XXIV presents a summary of the IOA recommended failure criticalities for the Power Reactants Storage and Distribution for the Post 51-L FMEA baseline.

TABLE XXIV POWER REACTANTS STORAGE AND DISTRIBUTION SYSTEM Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. CLD	0	0	0	2	0	0	2
2. DIODE	0	2	0	0	0	2	4
3. HDC	0	5	0	3	0	0	8
4. RPC	0	0	0	4	0	0	4
5. RESISTOR	0	1	0	0	0	1	2
6. SWITCH	4	11	0	3	0	0	18
7. VALVE	0	0	0	29	0	4	33
TOTAL	4	19	0	41	0	7	71

Table XXV presents a summary of the IOA recommended CIL items for the Power Reactants Storage and Distribution System for the Post 51-L baseline.

TABLE XXV POWER REACTANTS STORAGE AND DISTRIBUTION SYSTEM Summary of IOA Recommended Critical Items							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. CLD	0	0	0	0	0	0	0
2. DIODE	0	2	0	0	0	0	2
3. HDC	0	5	0	0	0	0	5
4. RPC	0	0	0	1	0	0	1
5. RESISTOR	0	1	0	0	0	0	1
6. SWITCH	4	10	0	1	0	0	15
7. VALVE	0	0	0	0	0	0	0
TOTAL	4	18	0	2	0	0	24

5.0 REFERENCES

Reference documentation available from NASA and Rockwell was used in the analysis. The documentation used included the following:

1. JSC-12820, PCN-1, STS Operational Flight Rules, 12-16-85
2. V45 File III, Operations and Maintenance Requirements and Specifications Document- Orbiter OMRSD- Electrical Power Generation/Power Reactant Storage and Distribution, 5-29-86
3. NSTS 22206, Instructions for Preparation of Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL), 10-10-86
4. 100-2G, Rockwell International Reliability Desk Instruction Flight Hardware FMEA and CIL, 1-31-84
5. Orbiter Fuel Cell Powerplant Review and Training Course, International Fuel Cells (IFC), 5-86
6. JSC-11174, Space Systems Handbook, Rev. C, DCN-5, 9-13-95
7. VS70-976102, Integrated System Schematic - Orbiter Vehicle OV-102 EPDC, Rev. F, 7-2-86
8. VS70-945099, Integrated System Schematic - Orbiter Vehicle OV-099, 103, & 104, Electrical Power Subsystem (EPS), 7-18-85
9. VS70-945102, Integrated System Schematic - Orbiter Vehicle OV-102, Electrical Power Subsystem (EPS), 9-19-84
10. Rockwell International Drawings
 - a. VS70-450212 CRYO Subsystem OV-102, Flt 7 and subs
 - b. VS70-450209 CRYO Subsystem OV-099, Flt 1-3 only
 - c. VS70-450202 CRYO Subsystem OV-102, Flt 1-4 only
 - d. VS70-450222 CRYO Subsystem OV-102, Flt 6
 - e. VS70-450219 CRYO Subsystem OV-99, 103 Flt 4 and subs

**APPENDIX A
ACRONYMS**

AOA	- Abort Once Around
ATO	- Abort To Orbit
CB	- Circuit Breaker
CIL	- Critical Items List
CLD	- Current Level Detector
CRIT	- Criticality
C&W	- Caution and Warning
ECLSS	- Environmental Control and Life Support System
EI	- Event Indicator
EPD&C	- Electrical Power Distribution and Control
EPG	- Electrical Power Generation
FCP	- Fuel Cell Powerplant
FC	- Fuel Cell
FMEA	- Failure Modes and Effects Analysis
FSSR	- Flight System Software Requirement
GAS	- Get Away Special
GPC	- General Purpose Computer
GSE	- Ground Support Equipment
HDC	- Hybrid Driver Controller
IOA	- Independent Orbiter Assessment
MDAC	- McDonnell Douglas Astronautics Company
MDM	- Multiplexer/Demultiplexer
NASA	- National Aeronautics and Space Administration
NA	- Not Applicable
NSTS	- National Space Transportation System
OF	- Operational Forward
OMRSD	- Operational Maintenance Requirements and Specifications Document
PCA	- Power Control Assembly
PCI	- Potential Critical Item
PLS	- Primary landing Site
PSA	- Power Section Assembly
PRCB	- Program Requirements Control Board
PRSDS	- Power Reactant Storage and Distribution System
RI	- Rockwell International
RCS	- Reactant Control Subsystem
RJ	- Reference Junction
RPC	- Remote Power Controller
RTLS	- Return To Landing Site
SC	- Signal Conditioner
STS	- Space Transportation System
TAL	- Transatlantic Abort Landing
TCS	- Thermal Control Subsystem
TC	- Temperature Controller
WRS	- Water Removal Subsystem

APPENDIX B

DEFINITIONS, GROUND RULES, AND ASSUMPTIONS

- B.1 Definitions**
- B.2 Project Level Ground Rules and Assumptions**
- B.3 Subsystem-Specific Ground Rules and Assumptions**

**APPENDIX B
DEFINITIONS, GROUND RULES, AND ASSUMPTIONS**

B.1 Definitions

Definitions contained in NSTS 22206, Instructions For Preparation of FMEA/CIL, 10 October 1986, were used with the following amplifications and additions.

INTACT ABORT DEFINITIONS:

RTLS - begins at transition to OPS 6 and ends at transition to OPS 9, post-flight

TAL - begins at declaration of the abort and ends at transition to OPS 9, post-flight

AOA - begins at declaration of the abort and ends at transition to OPS 9, post-flight

ATO - begins at declaration of the abort and ends at transition to OPS 9, post-flight

CREDIBLE (CAUSE) - an event that can be predicted or expected in anticipated operational environmental conditions. Excludes an event where multiple failures must first occur to result in environmental extremes

CONTINGENCY CREW PROCEDURES - procedures that are utilized beyond the standard malfunction procedures, pocket checklists, and cue cards

EARLY MISSION TERMINATION - termination of onorbit phase prior to planned end of mission

EFFECTS/RATIONALE - description of the case which generated the highest criticality

HIGHEST CRITICALITY - the highest functional criticality determined in the phase-by-phase analysis

MAJOR MODE (MM) - major sub-mode of software operational sequence (OPS)

MC - Memory Configuration of Primary Avionics Software System (PASS)

MISSION - assigned performance of a specific Orbiter flight with payload/objective accomplishments including orbit phasing and altitude (excludes secondary payloads such as GAS cans, middeck P/L, etc.)

MULTIPLE ORDER FAILURE - describes the failure due to a single cause or event of all units which perform a necessary (critical) function

OFF-NOMINAL CREW PROCEDURES - procedures that are utilized beyond the standard malfunction procedures, pocket checklists, and cue cards

OPS - software operational sequence

PRIMARY MISSION OBJECTIVES - worst case primary mission objectives are equal to mission objectives

PHASE DEFINITIONS:

PRELAUNCH PHASE - begins at launch count-down Orbiter power-up and ends at moding to OPS Major Mode 102 (liftoff)

LIFTOFF MISSION PHASE - begins at SRB ignition (MM 102) and ends at transition out of OPS 1 (Synonymous with ASCENT)

ONORBIT PHASE - begins at transition to OPS 2 or OPS 8 and ends at transition out of OPS 2 or OPS 8

DEORBIT PHASE - begins at transition to OPS Major Mode 301 and ends at first main landing gear touchdown

LANDING/SAFING PHASE - begins at first main gear touchdown and ends with the completion of post-landing safing operations

APPENDIX B
DEFINITIONS, GROUND RULES, AND ASSUMPTIONS

B.2 IOA Project Level Ground Rules and Assumptions

The philosophy embodied in NSTS 22206, Instructions for Preparation of FMEA/CIL, 10 October 1986, was employed with the following amplifications and additions.

1. The operational flight software is an accurate implementation of the Flight System Software Requirements (FSSRs).

RATIONALE: Software verification is out-of-scope of this task.

2. After liftoff, any parameter which is monitored by system management (SM) or which drives any part of the Caution and Warning System (C&W) will support passage of Redundancy Screen B for its corresponding hardware item.

RATIONALE: Analysis of on-board parameter availability and/or the actual monitoring by the crew is beyond the scope of this task.

3. Any data employed with flight software is assumed to be functional for the specific vehicle and specific mission being flown.

RATIONALE: Mission data verification is out-of-scope of this task.

4. All hardware (including firmware) is manufactured and assembled to the design specifications/drawings.

RATIONALE: Acceptance and verification testing is designed to detect and identify problems before the item is approved for use.

5. All Flight Data File crew procedures will be assumed performed as written, and will not include human error in their performance.

RATIONALE: Failures caused by human operational error are out-of-scope of this task.

6. All hardware analyses will, as a minimum, be performed at the level of analysis existent within NASA/Prime Contractor Orbiter FMEA/CILs, and will be permitted to go to greater hardware detail levels but not lesser.

RATIONALE: Comparison of IOA analysis results with other analyses requires that both analyses be performed to a comparable level of detail.

7. Verification that a telemetry parameter is actually monitored during AOS by ground-based personnel is not required.

RATIONALE: Analysis of mission-dependent telemetry availability and/or the actual monitoring of applicable data by ground-based personnel is beyond the scope of this task.

8. The determination of criticalities per phase is based on the worst case effect of a failure for the phase being analyzed. The failure can occur in the phase being analyzed or in any previous phase, whichever produces the worst case effects for the phase of interest.

RATIONALE: Assigning phase criticalities ensures a thorough and complete analysis.

9. Analysis of wire harnesses, cables, and electrical connectors to determine if FMEAs are warranted will not be performed nor FMEAs assessed.

RATIONALE: Analysis was substantially complete prior to NSTS 22206 ground rule redirection.

10. Analysis of welds or brazed joints that cannot be inspected will not be performed nor FMEAs assessed.

RATIONALE: Analysis was substantially complete prior to NSTS 22206 ground rule redirection.

11. Emergency system or hardware will include burst discs and will exclude the EMU Secondary Oxygen Pack (SOP), pressure relief valves and the landing gear pyrotechnics.

RATIONALE: Clarify definition of emergency systems to ensure consistency throughout IOA project.

**APPENDIX B
DEFINITIONS, GROUND RULES, AND ASSUMPTIONS**

B.3 *-Specific Ground Rules and Assumptions**

1. Component age life will not be considered in the analysis.

RATIONALE: Component age analysis is beyond the scope of this task.

2. An O2 cryo tank will be assumed lost if both heaters in one tank fail to function (i.e., neither heater will function with the delta current sensors enabled).

RATIONALE: Systems failure definition. Flight rule definition.

3. An H2 cryo tank will be assumed lost if neither heater in one tank will function.

RATIONALE: Systems failure definition. Flight rule definition.

4. An impending loss of all cryo O2 or all cryo H2 tanks will be cause loss to exercise the highest-priority abort mode the loss/leak will allow.

RATIONALE: Flight rule definition.

5. Continue nominal ascent if 2/3/4 O2 (H2) tanks fail when flying 3/4/5.

Enter next PLS daily go/no-go if two O2 (H2) tanks fail during lift-off and on-orbit.

RATIONALE: Flight rules go/no-go criteria.

6. A fuel cell will be considered failed if the following conditions exist.
 - a. Coolant pump or H2 pump/H2O separator is lost.
 - b. Coolant pressure >75 (71.4) PSIA and increasing.
 - c. Fuel cell unable to discharge water to the ECLSS H2O storage tanks or overboard via the fuel cell H2O relief system.
 - d. Fuel cell reactant valve fails closed.
 - e. Cannot be connected to a main bus.

- f. Fuel cell O2 reaction chambers cannot be purged.
 - g. Fuel cell end-cell heater failing on.
10. Loss of two fuel cells in the first stage of ascent is considered loss of life/vehicle.

RATIONALE: SRB loads are too high for one fuel cell to support. Voltage may go <25V which will shut down the GPC's.

11. Although the ECLSS product-water storage is a separate system from EPD&C/EPG, it will be considered as a failable redundant product-water relief line for purposes of the EPG functional criticality scenarios.

RATIONALE: This assumption violates general ground rule 2.3.2.d in NSTS 22206 but is essential for evaluating failures associated with the water relief line.

12. The start/sustaining heater on the left-hand FCP (FCP #1) is assumed to be disconnected. Thus, this FCP cannot be maintained operational at no-load, and will be considered shutdown if the load cannot be maintained at greater than 2 KW.

RATIONALE: Load needed to maintain operating temperature. RH FCP uses sustain heater to maintain temps at no-load.

13. For all "failed open" failure modes for valves which are normally open, redundancy screen B will be assumed failed.

RATIONALE: The failure is not detectable until the valve is required to be closed.

14. Five O2 and H2 tanks are being used as the baseline configuration under study.

RATIONALE: The configuration for all redundant components is being considered for this analysis.

15. Inadvertant Fuel Cell shutdown during RTLS and TAL abort is considered loss of crew/vehicle.

RATIONALE: Loss of FCP 1/Main Bus A is loss of OMS Engine Purge Capability (required for TAL) and Aft Compartment MPS Helium Purge capability (required for RTLS and TAL).

**APPENDIX C
DETAILED ASSESSMENT**

This section contains the IOA assessment worksheets generated during the assessment of this subsystem. The information on these worksheets facilitates the comparison of the NASA FMEA/CIL (Pre and Post 51-L) to the IOA detailed analysis worksheets included in Appendix E. Each of these worksheets identifies the NASA FMEA being assessed, corresponding MDAC Analysis Worksheet ID (Appendix E), hardware item, criticality, redundancy screens, and recommendations. For each failure mode, the highest assessed hardware and functional criticality is compared and discrepancies noted as "N" in the compare row under the column where the discrepancy occurred.

LEGEND FOR IOA ASSESSMENT WORKSHEETS

Hardware Criticalities:

- 1 = Loss of life or vehicle
- 2 = Loss of mission or next failure of any redundant item (like or unlike) could cause loss of life/vehicle
- 3 = All others

Functional Criticalities:

- 1R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of life or vehicle
- 2R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of mission

Redundancy Screens A, B and C:

- P = Passed Screen
- F = Failed Screen
- NA = Not Applicable

NASA Data :

- Baseline = NASA FMEA/CIL
- New = Baseline with Proposed Post 51-L Changes

CIL Item :

- X = Included in CIL

Compare Row :

- N = Non compare for that column (deviation)

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2001
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2001
 ITEM: SWITCH, FUEL CELL 1,2,3 START/STOP CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 2R]	[P]	[P]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

THIS ANALYSIS HAS BEEN DIVIDED INTO TWO CREDIBLE FAILURE MODES.
 REFERENCE ASSESSMENT ID EPD&C-2287 AND EPD&C-2288.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2002
 NASA FMEA #: 05-6MA-2084-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2002
 ITEM: RESISTORS, 5.1K, 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA WILL NEED TO INCLUDE RESISTORS 32V73A1A2A2R14, AND
 32V73A1A2A2R3

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2003
 NASA FMEA #: 05-6MA-2079-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2003
 ITEM: RESISTORS, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[F]	[P]	[P]	[X]
COMPARE	[/]	[N]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2004
 NASA FMEA #: 05-6MA-2079-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2004
 ITEM: RESISTORS, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2005
 NASA FMEA #: 05-6MA-2078-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2005
 ITEM: RESISTORS, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[F]	[P]	[P]	[]
COMPARE	[/]	[N]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA NEEDS TO CORRECT NOTATION OF RESISTOR 32V73A1A2A2R10. IOA
 CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2006
 NASA FMEA #: 05-6MA-2078-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2006
 ITEM: RESISTORS, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA NEEDS TO CORRECT NOTATION OF RESISTOR 32V73A1A2A2R10.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2007
 NASA FMEA #: 05-6MA-2078-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2007
 ITEM: RESISTORS, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA NEEDS TO CORRECT NOTATION OF RESISTOR 32V73A1A2A2R8. IOA
 CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2011
 NASA FMEA #: 05-6MA-2100-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2011
 ITEM: RESISTORS 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2012
 NASA FMEA #: 05-6MA-2100-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2012
 ITEM: RESISTORS 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2013
 NASA FMEA #: 05-6MA-2034-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2013
 ITEM: SWITCH, FUEL CELL NO 1 START UP HEATER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2014
 NASA FMEA #: 05-6MA-2035-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2014
 ITEM: SWITCH, FC NO 2,3, STARTUP HEATER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 1R]	[P]	[P]	[P]	[]
COMPARE	[/ N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2015	BASELINE []
NASA FMEA #: 05-6MA-2035-2	NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2015
 ITEM: SWITCH, FC NO 2,3, STARTUP HEATER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2016
 NASA FMEA #: 05-6MA-2093-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2016
 ITEM: RESISTOR, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2016A	BASELINE []
NASA FMEA #: 05-6MA-2093-2	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2016
ITEM: RESISTOR, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]	[]	[]
-----------	-------	-------	-------	-------	-------	-------

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2017
 NASA FMEA #: 05-6MA-2095-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2017
 ITEM: RESISTOR, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[3 /1R] [P] [P] [P] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN
 DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS
 WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2018
 NASA FMEA #: 05-6MA-2095-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2018
 ITEM: RESISTOR, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2019
 NASA FMEA #: 05-6MA-2094-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2019
 ITEM: RESISTOR, 5.1K, 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2020
 NASA FMEA #: 05-6MA-2084-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2020
 ITEM: RESISTOR, 5.1K, 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2021
 NASA FMEA #: 05-6MA-2106-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2021
 ITEM: RESISTOR, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2021A	BASELINE []
NASA FMEA #: 05-6MA-2106-2	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2021
ITEM: RESISTOR, 1.2K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2022
 NASA FMEA #: 05-6MA-2252-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2022
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2023	BASELINE []
NASA FMEA #: 05-6MA-2252-2	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2023
ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2024
 NASA FMEA #: 05-6MA-2206-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2024
 ITEM: HYBRID DRIVER CONTROLLER, TYPE I, AR9, AR8, AR8

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2025
 NASA FMEA #: 05-6MA-2206-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2025
 ITEM: HYBRID DRIVER CONTROLLER, TYPE I, AR9, AR8, AR8

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE PIECE PART FAILURES TO UPGRADE CRITICALITY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2026
 NASA FMEA #: 05-6MA-2253-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2026
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE PIECE PART FAILURES TO UPGRADE CRITICALITY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2027
 NASA FMEA #: 05-6MA-2253-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2027
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2028
 NASA FMEA #: 05-6MA-2253-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2028
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE PIECE PART FAILURES TO UPGRADE CRITICALITY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2029
 NASA FMEA #: 05-6MA-2253-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2029
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2030
 NASA FMEA #: 05-6MA-2253-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2030
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE PIECE PART FAILURE TO UPGRADE CRITICALITY. IOA
 CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2031	BASELINE []
NASA FMEA #: 05-6MA-2253-2	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2031
ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2032
 NASA FMEA #: 05-6MA-2207-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2032
 ITEM: HYBRID DRIVER CONTROLLER, TYPE 1, AR10, 11, 9,
 10, 9, 10

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2033
 NASA FMEA #: 05-6MA-2207-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2033
 ITEM: HYBRID DRIVER CONTROLLER, TYPE 1, AR10, 11, 9,
 10, 9, 10

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2035
 NASA FMEA #: 05-6MA-2155-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2035
 ITEM: EVENT INDICATOR, FC COOLANT PUMP DELTA P

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2036
 NASA FMEA #: 05-6MA-2151-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2036
 ITEM: EVENT INDICATOR, FC GPC PURGE SEQ DS1

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2038	BASELINE []
NASA FMEA #: 05-6MA-2043-1	NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2038
 ITEM: SWITCH, TOGGLE SELECTOR, FCP TEMP.

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2039
 NASA FMEA #: 05-6MA-2158-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2039
 ITEM: METER, FCP STACK OUTLET COOLANT TEMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2041
 NASA FMEA #: 05-6MA-2303-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2041
 ITEM: SIGNAL CONDITIONER NO. 1

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE FAILURES TO UPGRADE CRITICALITY. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2042	BASELINE []
NASA FMEA #: 05-6MA-2303-2	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2042
ITEM: SIGNAL CONDITIONER NO. 1

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

REQUIRES MULTIPLE FAILURES TO UPGRADE CRITICALITY. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2043
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2043
 ITEM: SIGNAL CONDITIONER NO. 1

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA HAS DELETED THIS FAILURE MODE. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2044	BASELINE []
NASA FMEA #: 05-6MA-2304-1	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2044
ITEM: SIGNAL CONDITIONER NO. 2

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2045
 NASA FMEA #: 05-6MA-2304-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2045
 ITEM: SIGNAL CONDITIONER NO. 2

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2046
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2046
 ITEM: SIGNAL CONDITIONER NO. 2

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA HAS DELETED THIS FAILURE MODE. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2047
 NASA FMEA #: 05-6MA-2301-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2047
 ITEM: SIGNAL CONDITIONER DSC OF3

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2049
 NASA FMEA #: 05-6MA-2301-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2049
 ITEM: SIGNAL CONDITIONER DSC OF3

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2050	BASELINE []
NASA FMEA #: 05-6MA-2302-1	NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2050
 ITEM: SIGNAL CONDITIONER DSC OA2

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2053
 NASA FMEA #: 05-6MA-2031-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2053
 ITEM: SWITCH, FUEL CELL GPC PURGE SEQ

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2055
 NASA FMEA #: 05-6MA-2077-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2055
 ITEM: RESISTOR, 5.1K 1/4 W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2056	BASELINE []
NASA FMEA #: 05-6MA-2077-2	NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2056
 ITEM: RESISTOR, 5.1K 1/4 W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS	CIL ITEM
		A	B	C
NASA	[3 / 3]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]
COMPARE	[/]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
-------------	--------	--------	--------	--------

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. AN INTERNAL SHORT OF A FILM RESISTOR IS A NONCREDIBLE FAILURE. NASA HAS DELETED THIS FMEA.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2057
 NASA FMEA #: 05-6MA-2032-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2057
 ITEM: SWITCH, FUEL CELL PURGE HEATER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 / 2]	[]	[]	[]	[X] *
IOA	[3 / 1R]	[P]	[P]	[P]	[]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.
 LOSS OF BOTH GPC AND MANUAL PURGE HEATER CAPABILITY. POSSIBLE
 LOSS OF MISSION OR CREW/VEHICLE WITH DEGRADATION OF FCP
 PERFORMANCE.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2059
 NASA FMEA #: 05-6MA-2120-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2059
 ITEM: RESISTOR, 5.1K 1/4 W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2060
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2060
 ITEM: RESISTOR, 5.1K 1/4 W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. AN INTERNAL SHORT OF A FILM RESISTOR IS A NONCREDIBLE FAILURE.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2061
 NASA FMEA #: 05-6MA-2117-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2061
 ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE PIECE PART FAILURES TO UPGRADE CRITICALITY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2062	BASELINE []
NASA FMEA #: 05-6MA-2117-2	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2062
ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2063
 NASA FMEA #: 05-6MA-2117-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2063
 ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE PIECE PART FAILURES TO UPGRADE CRITICALITY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2064
 NASA FMEA #: 05-6MA-2117-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2064
 ITEM: RESISTOR, 1.2K 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
	FLIGHT	HDW/FUNC	A	B	C	
NASA	[3 / 3]		[]	[]	[]	[] *
IOA	[3 / 3]		[]	[]	[]	[]
COMPARE	[/]		[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2065
 NASA FMEA #: 05-6MA-2119-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2065
 ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/04/87
 ASSESSMENT ID: EPD&C-2065A
 NASA FMEA #: 05-6MA-2076-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2065
 ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2066
 NASA FMEA #: 05-6MA-2119-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2066
 ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2067
 NASA FMEA #: 05-6MA-2177-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2067
 ITEM: REMOTE POWER CONTROLLER, 5 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[P]	[NA]	[P]	[]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2070
 NASA FMEA #: 05-6MA-2177-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2070
 ITEM: REMOTE POWER CONTROLLER, 5 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2071
 NASA FMEA #: 05-6MA-2180-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2071
 ITEM: REMOTE POWER CONTROLLER, 5 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[P]	[NA]	[P]	[]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2072
 NASA FMEA #: 05-6MA-2180-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2072
 ITEM: REMOTE POWER CONTROLLER, 5 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2074
 NASA FMEA #: 05-6MA-2180-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2074
 ITEM: REMOTE POWER CONTROLLER, 5 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2075
 NASA FMEA #: 05-6MA-2256-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2075
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE FAILURES TO UPGRADE CRITICALITY. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2076
 NASA FMEA #: 05-6MA-2256-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2076
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2077
 NASA FMEA #: 05-6MA-2104-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2077
 ITEM: RESISTOR, 2.2K & 1.8K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2078
 NASA FMEA #: 05-6MA-2104-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2078
 ITEM: RESISTOR, 2.2K & 1.8K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2079
 NASA FMEA #: 05-6MA-2104-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2079
 ITEM: RESISTOR, 2.2K & 1.8K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2080
 NASA FMEA #: 05-6MA-2104-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2080
 ITEM: RESISTOR, 2.2K & 1.8K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2081
 NASA FMEA #: 05-6MA-2259-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2081
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[P]	[F]	[P]	[X]
COMPARE	[/N]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE PIECE PART FAILURES TO UPGRADE CRITICALITY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2082
 NASA FMEA #: 05-6MA-2259-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2082
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2083
 NASA FMEA #: 05-6MA-2021-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2083
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE PIECE PART FAILURES TO UPGRADE CRITICALITY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2084
 NASA FMEA #: 05-6MA-2001-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2084
 ITEM: CIRCUIT BREAKER, FC #1 THERMAL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. SEE MDAC ID 2280 FOR
 "SHORTS, FAILS CLOSED" FAILURE MODES.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2086
 NASA FMEA #: 05-6MA-2033-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2086
 ITEM: SWITCH, FUEL CELL PURGE VALVES

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

SEE MDAC ID 2284 FOR "JAMMED IN OFF POSITION" FAILURE MODE.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2087	BASELINE []
NASA FMEA #: 05-6MA-2087-1	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2087
ITEM: RESISTORS, 1.2 KOHM, 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[F]	[NA]	[P]	[]
COMPARE	[/]	[N]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2088
 NASA FMEA #: 05-6MA-2087-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2088
 ITEM: RESISTORS, 1.2 KOHM, 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2089
 NASA FMEA #: 05-6MA-2088-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2089
 ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[F]	[P]	[P]	[]
COMPARE	[/]	[N]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (if applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2090
 NASA FMEA #: 05-6MA-2088-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2090
 ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. AN INTERNAL SHORT OF A FILM RESISTOR IS A NONCREDIBLE FAILURE. NASA HAS DELETED THIS FMEA.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2091	BASELINE []
NASA FMEA #: 05-6MA-2201-1	NEW [X]
SUBSYSTEM: EPD&C	
MDAC ID: 2091	
ITEM: HYBRID DRIVER CONTROLLER TYPE III AR1, AR2	
LEAD ANALYST: J. PATTON	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2093	BASELINE []
NASA FMEA #: 05-6MA-2202-1	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2093
ITEM: HYBRID DRIVER CONTROLLER TYPE III AR3, AR4

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2094
 NASA FMEA #: 05-6MA-2202-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2094
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR3, AR4

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[3 /2R]	[P]	[NA]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2095
 NASA FMEA #: 05-6MA-2001-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2095
 ITEM: CIRCUIT BREAKER, FC #2 THERMAL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

SEE MDAC ID 2280 FOR "SHORTS, FAILS CLOSED" FAILURE MODES.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2096
 NASA FMEA #: 05-6MA-2087-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2096
 ITEM: RESISTORS, 1.2 KOHM, 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[F]	[NA]	[P]	[]
COMPARE	[/]	[N]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2097	BASELINE []
NASA FMEA #: 05-6MA-2087-2	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2097
ITEM: RESISTORS, 1.2 KOHM, 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2098
 NASA FMEA #: 05-6MA-2088-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2098
 ITEM: RESISTOR, 5.1K 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[F]	[P]	[P]	[]
COMPARE	[/]	[N]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2100
 NASA FMEA #: 05-6MA-2201-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2100
 ITEM: HYBRID DRIVER CONTROLLER, TYPE III, AR1, AR2

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2102
 NASA FMEA #: 05-6MA-2202-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2102
 ITEM: HYBRID DRIVER CONTROLLER, TYPE III, AR3, AR4

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2103
 NASA FMEA #: 05-6MA-2202-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2103
 ITEM: HYBRID DRIVER CONTROLLER, TYPE III, AR3, AR4

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2105
 NASA FMEA #: 05-6MA-2087-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2105
 ITEM: RESISTORS, 1.2 KOHM, 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[F]	[NA]	[P]	[]
COMPARE	[/]	[N]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2106
 NASA FMEA #: 05-6MA-2087-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2106
 ITEM: RESISTORS, 1.2 KOHM, 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2107	BASELINE []
NASA FMEA #: 05-6MA-2088-1	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2107
ITEM: RESISTOR, 5.1K, 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[F]	[P]	[P]	[]
COMPARE	[/]	[N]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2108
 NASA FMEA #: 05-6MA-2088-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2108
 ITEM: RESISTOR, 5.1K, 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. AN INTERNAL SHORT OF A FILM RESISTOR IS A NONCREDIBLE FAILURE. NASA HAS DELETED THIS FMEA.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2109
 NASA FMEA #: 05-6MA-2201-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2109
 ITEM: HYBRID DRIVER CONTROLLER, TYPE III, AR1, AR2

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2110
 NASA FMEA #: 05-6MA-2201-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2110
 ITEM: HYBRID DRIVER CONTROLLER, TYPE III, AR1, AR2

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2111
 NASA FMEA #: 05-6MA-2202-1
 SUBSYSTEM: EPD&C
 MDAC ID: 2111
 ITEM: HYBRID DRIVER CONTROLLER, TYPE III, AR3, AR4
 LEAD ANALYST: J. PATTON

NASA DATA:
 BASELINE []
 NEW [X]

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2112
 NASA FMEA #: 05-6MA-2202-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2112
 ITEM: HYBRID DRIVER CONTROLLER, TYPE III, AR3, AR4

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[F]	[P]	[X] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2113	BASELINE []
NASA FMEA #: 05-6MA-2008-1	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2113
ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]	[]	[]
						(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:
IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2114
 NASA FMEA #: 05-6MA-2009-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2114
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/03/87
 ASSESSMENT ID: EPD&C-2115A
 NASA FMEA #: 05-6MA-2019-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2115
 ITEM: FUSES, H2 AND O2 FLOWMETER PROTECTION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

HIERARCHY 4) ON IOA ANALYSIS WORKSHEET SHOULD DELETE FUSES F11 AND F44 AND REPLACE WITH FUSES F7 AND F8.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2118
 NASA FMEA #: 05-6MA-2011-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2118
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2119
 NASA FMEA #: 05-6MA-2107-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2119
 ITEM: RESISTOR, 5.1K, 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2120
 NASA FMEA #: 05-6MA-2107-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2120
 ITEM: RESISTOR, 5.1K, 1/4W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2121
 NASA FMEA #: 05-6MA-2205-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2121
 ITEM: HYBRID DRIVER CONTROLLER, TYPE III, AR8, AR7,
 AR7

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2123
 NASA FMEA #: 05-6MA-2254-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2123
 ITEM: DIODE, BLOCKING 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2124
 NASA FMEA #: 05-6MA-2254-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2124
 ITEM: DIODE, BLOCKING 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2125
 NASA FMEA #: 05-6MA-2209-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2125
 ITEM: HYBRID DRIVER CONTROLLER, TYPE I, AR13, AR12,
 AR12

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2126
 NASA FMEA #: 05-6MA-2209-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2126
 ITEM: HYBRID DRIVER CONTROLLER, TYPE I, AR13, AR12,
 AR12

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2127
 NASA FMEA #: 05-6MA-2208-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2127
 ITEM: HYBRID DRIVER CONTROLLER, TYPE I, AR12

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2127A
 NASA FMEA #: 05-6MA-2208-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2127
 ITEM: HYBRID DRIVER CONTROLLER, TYPE I, AR12

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2129
 NASA FMEA #: 05-6MA-2217-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2129
 ITEM: HYBRID DRIVER CONTROLLER, TYPE I, AR11, AR11

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2130
 NASA FMEA #: 05-6MA-2105-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2130
 ITEM: RESISTOR 1.2 KOHM, 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2131
 NASA FMEA #: 05-6MA-2105-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2131
 ITEM: RESISTOR 1.2 KOHM, 2W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2133	BASELINE []
NASA FMEA #: 05-6MA-2037-2	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2133
ITEM: SWITCH, FUEL CELL H2O LINE HTR

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]	[]	[]
-------------	--------	--------	--------	--------	--------	--------

(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2134
 NASA FMEA #: 05-6MA-2004-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2134
 ITEM: FUSE, 1 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2135
 NASA FMEA #: 05-6MA-2030-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2135
 ITEM: FUSE, 7.5 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2136
 NASA FMEA #: 05-6MA-2013-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2136
 ITEM: FUSE , 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2138
 NASA FMEA #: 05-6MA-2203-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2138
 ITEM: HYBRID DRIVER CONTROLLER TYPE III, AR7

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2139
 NASA FMEA #: 05-6MA-2013-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2139
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION. THIS IS A STANDBY REDUNDANT ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2140
 NASA FMEA #: 05-6MA-2221-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2140
 ITEM: HYBRID DRIVER CONTROLLER TYPYR III AR14

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[2 / 1R]	[P]	[NA]	[P]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION. THIS IS A STANDBY REDUNDANT ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2141
 NASA FMEA #: 05-6MA-2204-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2141
 ITEM: HYBRID DRIVER CONTROLLER TYPER III AR14

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2142
 NASA FMEA #: 05-6MA-2004-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2142
 ITEM: FUSE, 1 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2143
 NASA FMEA #: 05-6MA-2013-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2143
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2144
 NASA FMEA #: 05-6MA-2222-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2144
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR14

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2146
 NASA FMEA #: 05-6MA-2013-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2146
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[2 / 1R]	[P]	[NA]	[P]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION. THIS IS A STANDBY REDUNDANT ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2148
 NASA FMEA #: 05-6MA-2204-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2148
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR13

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2149
 NASA FMEA #: 05-6MA-2013-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2149
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA ANALYSIS WORKSHEET SHOULD DENOTE 40V76A27F8. ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2150
 NASA FMEA #: 05-6MA-2222-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2150
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR24

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2152
 NASA FMEA #: 05-6MA-2030-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2152
 ITEM: FUSE, 7.5 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2153
 NASA FMEA #: 05-6MA-2013-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2153
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

BREAKDOWN HIERARCHY 4) ON IOA WORKSHEET SHOULD DENOTE FUSE F3 AND LOCATION SHOULD DENOTE 40V76A27F3.
 ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION. THIS IS A STANDBY REDUNDANT ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2154
 NASA FMEA #: 05-6MA-2221-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2154
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR5

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[2 /1R] [P] [NA] [P] [A]
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable):

ADEQUATE []
 INADEQUATE []

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION. THIS IS A STANDBY REDUNDANT ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2155
 NASA FMEA #: 05-6MA-2221-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2155
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR5

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2156
 NASA FMEA #: 05-6MA-2006-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2156
 ITEM: FUSE, 1 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2157
 NASA FMEA #: 05-6MA-2007-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2157
 ITEM: FUSE, 1 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2158
 NASA FMEA #: 05-6MA-2038-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2158
 ITEM: SWITCH, FUEL CELL H2O RELIEF HEATER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.
 LOSS OF EITHER A OR B HEATERS RESULTS IN LOSS OF ABILITY TO RID
 FCP OF PRODUCT H2O. POSSIBLE LOSS OF CREW/VEHICLE WHEN FUEL
 CELLS FLOOD.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2160
 NASA FMEA #: 05-6MA-2270-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2160
 ITEM: DIODE, 1 AMP BLOCKING

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2161
 NASA FMEA #: 05-6MA-2270-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2161
 ITEM: DIODE, 1 AMP BLOCKING

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2162
 NASA FMEA #: 05-6MA-2099-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2162
 ITEM: RESISTORS, 5.1 K OHM, 1/4 W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2163
 NASA FMEA #: 05-6MA-2099-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2163
 ITEM: RESISTORS, 5.1 K OHM, 1/4 W

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2164
 NASA FMEA #: 05-6MA-2272-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2164
 ITEM: DIODE, 1 AMP ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA HAS SEPARATED THIS FMEA INTO TWO FMEAs. DIODES CR51 AND CR53 ARE ON 2272 AND DIODES CR50 AND CR52 ARE ON 2273. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87
 ASSESSMENT ID: EPD&C-2164A
 NASA FMEA #: 05-6MA-2273-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2164
 ITEM: DIODE, 1 AMP ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

THIS FMEA NOW INCLUDES DIODES CR50 AND CR52 ONLY.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2165
 NASA FMEA #: 05-6MA-2272-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2165
 ITEM: DIODE, 1 AMP ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

THIS FMEA NOW INCLUDES DIODES CR51 AND CR53 ONLY.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87
 ASSESSMENT ID: EPD&C-2165A
 NASA FMEA #: 05-6MA-2273-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2165
 ITEM: DIODE, 1 AMP ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

THIS FMEA NOW INCLUDES DIODES CR50 AND CR52 ONLY.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2166
 NASA FMEA #: 05-6MA-2271-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2166
 ITEM: DIODE, 1 AMP ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2167
 NASA FMEA #: 05-6MA-2271-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2167
 ITEM: DIODE, 1 AMP ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2168
 NASA FMEA #: 05-6MA-2121-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2168
 ITEM: RESISTOR, 5.1K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2169
 NASA FMEA #: 05-6MA-2121-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2169
 ITEM: RESISTOR, 5.1K

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. AN INTERNAL SHORT OF A FILM RESISTOR IS A NONCREDIBLE FAILURE. NASA HAS DELETED THIS FMEA.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2170
 NASA FMEA #: 05-6MA-2010-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2170
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2171
 NASA FMEA #: 05-6MA-2203-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2171
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR5

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2172
 NASA FMEA #: 05-6MA-2203-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2172
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR5

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2173
 NASA FMEA #: 05-6MA-2010-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2173
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[]
COMPARE	[N /]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. THIS IS A STANDBY REDUNDANT ITEM.

APPENDIX C
AS WORKSHEET

ASSESSMENT DATE: 1/1/88
 ASSESSMENT ID: E
 NASA FMEA #: C 1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM:
 MDAC ID:
 ITEM: IP

LEAD ANALYST: N

ASSESSMENT:

CRIT	REDUNDANCY SCREENS			CIL ITEM
	A	B	C	
NASA	[P]	[NA]	[P]	[] *
IOA	[P]	[P]	[P]	[]
COMPARE	[]	[N]	[]	[]

RECOMM (If different from NASA)
 [] [] [] [] []
 (ADD/DELETE)

* C RATIONALE: (If applicable)
 ADEQUATE []
 INADEQUATE []

RE WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2178
 NASA FMEA #: 05-6MA-2203-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2178
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR39

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2179
 NASA FMEA #: 05-6MA-2010-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2179
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. THIS IS A STANDBY
 REDUNDANT ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2180
 NASA FMEA #: 05-6MA-2204-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2180
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR40

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. THIS IS A STANDBY
 REDUNDANT ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2181
 NASA FMEA #: 05-6MA-2204-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2181
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR40

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2182
 NASA FMEA #: 05-6MA-2010-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2182
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

BREAKDOWN HIERARCHY 3) ON IOA ANALYSIS WORKSHEET SHOULD DENOTE
 PCA-3. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2184
 NASA FMEA #: 05-6MA-2222-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2184
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR25

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2185
 NASA FMEA #: 05-6MA-2010-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2185
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. THIS A STANDBY REDUNDANT ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2186
 NASA FMEA #: 05-6MA-2221-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2186
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR6

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

HEATERS REQUIRED DURING STARTUP OF FCP. ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION. THIS IS A STANDBY REDUNDANT ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2188
 NASA FMEA #: 05-6MA-2028-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2188
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2189
 NASA FMEA #: 05-6MA-2230-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2189
 ITEM: HYBRID DEVICE CONTROLLER TYPE III AR6

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION OF THE PRIMARH HDC'S FOR THE H2O RELIEF LINE HEATERS.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2190
 NASA FMEA #: 05-6MA-2230-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2190
 ITEM: HYBRID DEVICE CONTROLLER TYPE III AR6

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2191
 NASA FMEA #: 05-6MA-2230-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2191
 ITEM: HYBRID DEVICE CONTROLLER TYPE III AR6

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION OF THE SECONDARY HDC'S FOR THE H2O RELIEF LINE HEATERS.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2192
 NASA FMEA #: 05-6MA-2230-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2192
 ITEM: HYBRID DEVICE CONTROLLER TYPE III AR6

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2193
 NASA FMEA #: 05-6MA-2029-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2193
 ITEM: FUSE, 1 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 1R]	[P]	[NA]	[P]	[]
COMPARE	[/ N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2194
 NASA FMEA #: 05-6MA-2229-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2194
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR37

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 1R]	[P]	[P]	[P]	[]
COMPARE	[/ N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2195
 NASA FMEA #: 05-6MA-2229-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2195
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR37

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2196
 NASA FMEA #: 05-6MA-2601-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2196
 ITEM: FUSE, 3 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2197
 NASA FMEA #: 05-6MA-2228-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2197
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR5, AR36

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2198
 NASA FMEA #: 05-6MA-2228-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2198
 ITEM: HYBRID DRIVER CONTROLLER TYPE III AR5, AR36

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[2 / 1R]	[P]	[F]	[F]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION, DUE TO TESTS RESULTS FROM ROCKWELL.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2199	BASELINE []
NASA FMEA #: 05-6MA-2044-1	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2199
ITEM: THERMAL SWITCH

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY	REDUNDANCY SCREENS			CIL ITEM
	FLIGHT	A	B	C	
	HDW/FUNC				
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 1R]	[]	[]	[]	[]
COMPARE	[/ N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[3 / 1R]	[P]	[P]	[P]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

ALTHOUGH THE CAPABILITY TO RESTART A FCP ON-ORBIT HAS NEVER BEEN DEMONSTRATED, PROCEDURES EXIST TO ACCOMPLISH THIS. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2200
 NASA FMEA #: 05-6MA-2044-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2200
 ITEM: THERMAL SWITCH

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2201	BASELINE []
NASA FMEA #: 05-6MA-2045-1	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2201
ITEM: THERMAL SWITCH

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[. /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:
IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2202
 NASA FMEA #: 05-6MA-2045-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2202
 ITEM: THERMAL SWITCH

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 REQUIRES MULTIPLE FAILURES TO UPGRADE FUNCTIONAL CRITICALITY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2203
 NASA FMEA #: 05-6MA-2046-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2203
 ITEM: THERMAL SWITCH

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2204
 NASA FMEA #: 05-6MA-2046-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2204
 ITEM: THERMAL SWITCH

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE FAILURES TO UPGRADE FUNCTIONAL CRITICALITY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2205	BASELINE []
NASA FMEA #: NONE	NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2205
 ITEM: TEMPERATURE CONTROLLER AR49, AR49

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

NASA HAS DELETED THIS FAILURE MODE. SEE MDAC ID 2289 THRU 2294.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2206
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2206
 ITEM: TEMPERATURE CONTROLLER AR49, AR49

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA HAS DELETED THIS FAILURE MODE. SEE MDAC ID 2289 THRU 2294.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2207
 NASA FMEA #: 05-6MA-2122-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2207
 ITEM: FCP 1,2,3 HTR PWR ON IND. 5.1K RESISTOR

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

HIERARCHY 3) ON IOA ANALYSIS SHEETS SHOULD READ TERM BD.
 40TB134,135,136. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2223
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2223
 ITEM: SWITCH, H2 TANK 1-4 PRIMARY HEATER CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA HAS COMBINED PRIMARY AND SECONDARY HEATER CONTROL INTO ONE FAILURE MODE. IOA CONCURS WITH THIS REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2224
 NASA FMEA #: 05-6MB-2027-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2224
 ITEM: SWITCH, H2 TANK 1-4 PRIMARY HEATER CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[1 /1]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 THIS ANALYSIS HAS BEEN DIVIDED INTO TWO CREDIBLE FAILURE MODES.
 REFERENCE ASSESSMENT ID EPD&C-2312 AND EPD&C-2226.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2225
 NASA FMEA #: 05-6MB-2027-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2225
 ITEM: SWITCH, H2 TANK 1-4 STANDBY HEATER CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2226	BASELINE []
NASA FMEA #: 05-6MB-2027-2	NEW [X]
SUBSYSTEM: EPD&C	
MDAC ID: 2226	
ITEM: SWITCH, H2 TANK 1-4 STANDBY HEATER CONTROL	
LEAD ANALYST: J. PATTON	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[1 /1]	[P]	[NA]	[P]	[X]
COMPARE	[N /N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

NASA HAS COMBINED THIS FAILURE MODE WITH MDAC ID 2312 AND MDAC ID 2313. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2227
 NASA FMEA #: 05-6MB-2028-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2227
 ITEM: SWITCH, O2 TANK 1-4 TEST/RESET CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVAULTION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2228
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2228
 ITEM: SWITCH, O2 TANK 1-4 TEST/RESET CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

THIS ANALYSIS HAS BEEN DIVIDED INTO TWO CREDIBLE FAILURE MODES.
 REFERENCE ASSESSMENT ID EPD&C-2314 AND EPD&C-2315.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2231
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2231
 ITEM: SWITCH, O2 TANK 1-4 STANDBY HEATER CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 NASA HAS COMBINED THIS FAILURE MODE WITH MDAC ID 2229. IOA
 CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2232
 NASA FMEA #: 05-6MB-2029-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2232
 ITEM: SWITCH, O2 TANK 1-4 STANDBY HEATER CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[1 /1]	[P]	[NA]	[P]	[X]
COMPARE	[N /N]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA HAS COMBINED THIS FAILURE MODE WITH MDAC ID 2316 AND MDAC ID 2317. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2233
 NASA FMEA #: 05-6MB-2076-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2233
 ITEM: RESISTORS, 1.2 KOHM, 2 WATT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

HIERARCHY 4) ON ANALYSIS WORKSHEET SHOULD READ RESISTORS A1R1, R5, R11, R14, A2R2, R10. FAILURE IS READILY DETECTABLE. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2234	BASELINE []
NASA FMEA #: NONE	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2234
ITEM: RESISTORS, 1.2 KOHM, 2 WATT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
INADEQUATE []

REMARKS:

NASA NEEDS TO GENERATE A FMEA TO COVER THE "PARAMETER DEVIATION,
LO-RESIST" FAILURE MODE.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2235
 NASA FMEA #: 05-6MB-2176-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2235
 ITEM: REMOTE POWER CONTROLLER 10A

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2237
 NASA FMEA #: 05-6MB-2177-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2237
 ITEM: REMOTE POWER CONTROLLER 5A

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2238
 NASA FMEA #: 05-6MB-2177-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2238
 ITEM: REMOTE POWER CONTROLLER 5A

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'A REEVALUATION. THIS ITEM SHOULD BE A CIL ITEM.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2239
 NASA FMEA #: 05-6MB-2201-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2239
 ITEM: HYBRID DRIVER CONTROLLER, FUEL CELL 1,2,3, OPEN CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[2 / 1R]	[P]	[P]	[P]	[X]
COMPARE	[N / N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

LOSS OF POWER TO "OPEN" POSITION OF FCP REACTANT SUPPLY VALVE.
 LOSS OF REACTANTS TO FCP AND FCP SHUTDOWN. IOA CONCURS WITH
 NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2240
 NASA FMEA #: 05-6MB-2201-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2240
 ITEM: HYBRID DRIVER CONTROLLER, FUEL CELL 1,2,3, OPEN CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

ADDITIONAL FAILURE CAUSES INADVERTENT OPEN OF REACTANT VALVE,
 CAUSING REACTANT CROSSOVER IN FCP AND POSSIBLE EXPLOSION.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2241
 NASA FMEA #: 05-6MB-2202-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2241
 ITEM: HYBRID DRIVER CONTROLLER, FUEL CELL 1,2,3, CLOSE
 CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2242
 NASA FMEA #: 05-6MB-2202-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2242
 ITEM: HYBRID DRIVER CONTROLLER, FUEL CELL 1,2,3, CLOSE CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [A]
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 INABILITY TO CLOSE VALVE. POSSIBLE REACTANT CROSSOVER IN FAILING FCP, CREATING AN POSSIBLE EXPLOSIVE SITUATION. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2243
 NASA FMEA #: 05-6MB-2251-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2243
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2244	BASELINE []
NASA FMEA #: 05-6MB-2251-2	NEW [X]

SUBSYSTEM: EPD&C
MDAC ID: 2244
ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[] (ADD/DELETE)
-------------	--------	--------	--------	------------------------

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2247
 NASA FMEA #: 05-6MB-2203-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2247
 ITEM: HYBRID DRIVER CONTROLLER, O2 HTR A&B CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2248
 NASA FMEA #: 05-6MB-2203-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2248
 ITEM: HYBRID DRIVER CONTROLLER, O2 HTR A&B CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

ADDITIONAL SERIES HDC SHORT, FAILURE OF MANIFOLD VALVE AND TANK RELIEF VALVE CLOSED RESULT IN CONTINUOUS ENERGIZING OF O2 HEATER CONTROL, POSSIBLE DAMAGE OF TANK AND LOSS OF MISSION. OVERHEATING OF TANK COULD LEAD TO LOSS OF CREW/VEHICLE. IOA CONRUS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2249
 NASA FMEA #: 05-6MB-2204-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2249
 ITEM: HYBRID DRIVER CONTROLLER, O2 HTR A&B INHIBIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2251
 NASA FMEA #: 05-6MB-2301-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2251
 ITEM: CURRENT LEVEL DETECTOR, O2 TANK HTR

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2252
 NASA FMEA #: 05-6MB-2301-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2252
 ITEM: CURRENT LEVEL DETECTOR, O2 TANK HTR

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2253
 NASA FMEA #: 05-6MB-2077-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2253
 ITEM: O2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2254
 NASA FMEA #: 05-6MB-2044-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2254
 ITEM: 02 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2255
 NASA FMEA #: 05-6MB-2045-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2255
 ITEM: H2 GSE SUPPLY VALVE CONTROL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

C-4

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2258
 NASA FMEA #: 05-6MB-2048-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2258
 ITEM: 02 GSE SUPPLY VALVE CONTROL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /3]	[]	[]	[]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

REQUIRES MULTIPLE FAILURE TO UPGRADE CRITICALITY. IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2260
 NASA FMEA #: 05-6MB-2050-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2260
 ITEM: O2 PRIMARY ECLSS VALVE #1 SUPPLY SYS.

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2261A
 NASA FMEA #: 05-6MB-2031-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2261
 ITEM: H2 MANIFOLD 2 ISOLATION VLV CNTL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /]	[]	[N]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUTION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2261B
 NASA FMEA #: 05-6MB-2031-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2261
 ITEM: H2 MANIFOLD 2 ISOLATION VLV CNTL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2262
 NASA FMEA #: 05-6MB-2031-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2262
 ITEM: H2 MANIFOLD 2 ISOLATION VLV CNTL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2263A
 NASA FMEA #: 05-6MB-2031-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2263
 ITEM: H2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2265
 NASA FMEA #: 05-6MB-2077-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2265
 ITEM: O2 MANIFOLD 2 ISOL VLV CONTROL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /1R]	[P]	[P]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2265A
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2265
 ITEM: O2 MANIFOLD 2 ISOL VLV CONTROL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2266
 NASA FMEA #: 05-6MB-2260-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2266
 ITEM: 02 MANIFOLD 2 ISOL VLV CONTROL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87	NASA DATA:
ASSESSMENT ID: EPD&C-2268	BASELINE []
NASA FMEA #: 05-6MB-2252-2	NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2268
 ITEM: FCP 1 REACTANT VLV CNTL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

NASA INCLUDES WHAT PARTS? IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2269
 NASA FMEA #: 05-6MB-2043-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2269
 ITEM: FCP 2 REACTANT VLV CNTL CKT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 NASA INCLUDES WHAT PARTS?

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2270
 NASA FMEA #: 05-6MB-2252-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2270
 ITEM: FCP 2 REACTANT VLV CNTL CKT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 NASA INCLUDES WHAT PARTS?

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2272
 NASA FMEA #: 05-6MB-2043-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2272
 ITEM: FCP 3 REACTANT VLV CNTL CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /3]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 NASA INCLUDES WHAT PARTS?

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2273
 NASA FMEA #: 05-6MB-2049-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2273
 ITEM: O2 SECONDARY ECLSS VLV NO. 2 SUPPLY SYS

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[X] *
IOA	[3 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2274
 NASA FMEA #: 05-6MB-2052-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2274
 ITEM: O2 SECONDARY ECLSS VLV NO. 2 SUPPLY SYS

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2276
 NASA FMEA #: 05-6MB-2080-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2276
 ITEM: H2 HEATER A&B CONTROL CIRCUITS

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

"B" SCREEN SHOULD BE "NA" DUE TO STANDBY REDUNDANCY.
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/08/87
 ASSESSMENT ID: EPD&C-2278
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2278
 ITEM: O2 HEATER A&B CONTROL CIRCUITS

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[X]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

"B" SCREEN SHOULD BE "NA" DUE TO STANDBY REDUNDANCY.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/28/87
 ASSESSMENT ID: EPD&C-2280X
 NASA FMEA #: 05-6MA-2001-4

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2280
 ITEM: CIRCUIT BREAKERS, FC #1, #2, #3 THERMAL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

SEE MDAC ID 2084, 2095, AND 2104 FOR "OPEN" FAILURE MODE.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87
 ASSESSMENT ID: EPD&C-2281X
 NASA FMEA #: 05-6MA-2032-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2281
 ITEM: SWITCH, FUEL CELL PURGE HEATER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /2]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[]
COMPARE	[/N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. SEE MDAC ID 2057 AD 2058
 FOR ADDITIONAL FAILURE MODES.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87
 ASSESSMENT ID: EPD&C-2282X
 NASA FMEA #: 05-6MA-2122-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2282
 ITEM: FCP 1,2,3, HTR PWR ON IND 5.1K RESISTOR

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

SEE MDAC ID 2207 FOR "OPEN, HI-RESIST" FAILURE MODE.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87
 ASSESSMENT ID: EPD&C-2283X
 NASA FMEA #: 05-6MA-2151-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2283
 ITEM: EVENT INDICATOR, FC GPC PURGE SEQ DS1

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87
 ASSESSMENT ID: EPD&C-2284X
 NASA FMEA #: 05-6MA-2033-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2284
 ITEM: SWITCH, FUEL CELL PURGE VALVES

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[P]	[P]	[P]	[] *
IOA	[3 /2R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

REMARKS: ADEQUATE []
 INADEQUATE []

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87
 ASSESSMENT ID: EPD&C-2285X
 NASA FMEA #: 05-6MA-2039-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2285
 ITEM: SWITCH, FUEL CELL 1,2,3 START/STOP CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87
 ASSESSMENT ID: EPD&C-2286X
 NASA FMEA #: 05-6MA-2039-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2286
 ITEM: SWITCH, FUEL CELL 1,2,3 START/STOP CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87
 ASSESSMENT ID: EPD&C-2287X
 NASA FMEA #: 05-6MA-2039-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2287
 ITEM: SWITCH, FUEL CELL 1,2,3 START/STOP CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

CIL	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/11/87	NASA DATA:
ASSESSMENT ID: EPD&C-2288X	BASELINE []
NASA FMEA #: 05-6MA-2039-4	NEW [X]
SUBSYSTEM: EPD&C	
MDAC ID: 2288	
ITEM: SWITCH, FUEL CELL 1,2,3 START/STOP CONTROL	
LEAD ANALYST: J. PATTON	

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[3 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
INADEQUATE []

REMARKS:
IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2289X
 NASA FMEA #: 05-6MA-2307-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2289
 ITEM: REFERENCE JUNCTION, H2O NOZZLE A CONTROLLER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[NA]	[NA]	[NA]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. A FAILED LOW REFERENCE JUNCTION WILL CAUSE AN INCORRECT SIGNAL TO THE SIGNAL CONDITIONER. HEATERS WILL FAIL ON. HOWEVER TESTS AT ROCKWELL SHOWED THIS TO BE A 3/3 FAILURE.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2290X
 NASA FMEA #: 05-6MA-2307-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2290
 ITEM: REFERENCE JUNCTION, H2O NOZZLE A CONTROLLER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2291X
 NASA FMEA #: 05-6MA-2308-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2291
 ITEM: REFERENCE JUNCTION, H2O NOZZLE B CONTROLLER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[NA]	[NA]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION, DUE TO TEST RESULTS FROM
 ROCKWELL.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2292X
 NASA FMEA #: 05-6MA-2308-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2292
 ITEM: REFERENCE JUNCTION, H2O NOZZLE B CONTROLLER

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2293X
 NASA FMEA #: 05-6MA-2309-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2293
 ITEM: FUSE, 10 AMP

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87	NASA DATA:
ASSESSMENT ID: EPD&C-2294X	BASELINE []
NASA FMEA #: 05-6MA-2310-1	NEW [X]
SUBSYSTEM: EPD&C	
MDAC ID: 2294	
ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER	
CIRCUIT A	

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[NA]	[NA]	[NA]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/]	[]	[]	[]	[]
				(ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[]
INADEQUATE	[]

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2295X
 NASA FMEA #: 05-6MA-2310-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2295
 ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER
 CIRCUIT A

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[NA]	[NA]	[NA]	[X]
COMPARE	[/]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION, DUE TO TEST RESULTS FROM
 ROCKWELL.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2296X
 NASA FMEA #: 05-6MA-2310-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2296
 ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER
 CIRCUIT A

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2297X
 NASA FMEA #: 05-6MA-2311-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2297
 ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER
 CIRCUIT B

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87	NASA DATA:
ASSESSMENT ID: EPD&C-2298X	BASELINE []
NASA FMEA #: 05-6MA-2311-2	NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2298
 ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER
 CIRCUIT B

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[O]	[]
/ COMPARE	[]	[]	[]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2299X
 NASA FMEA #: 05-6MA-2311-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2299
 ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER
 CIRCUIT B

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (AD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2300X
 NASA FMEA #: 05-6MA-2311-4

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2300
 ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER
 CIRCUIT B

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[NA]	[NA]	[NA]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION, DUE TO TEST RESULTS FROM ROCKWELL.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2301X
 NASA FMEA #: 05-6MA-2311-5

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2301
 ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER
 CIRCUIT B

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[NA]	[NA]	[NA]	[]
COMPARE	[/]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION, DUE TO TEST RESULTS FROM ROCKWELL.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/18/87
 ASSESSMENT ID: EPD&C-2302X
 NASA FMEA #: 05-6MA-2311-6

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2302
 ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER
 CIRCUIT B

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[3 /1R]	[P]	[NA]	[P]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/26/87
 ASSESSMENT ID: EPD&C-2310X
 NASA FMEA #: 05-6MB-2026-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2310
 ITEM: SWITCH, FUEL CELL 1, 2, 3 REACTANTS

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[F]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/26/87
 ASSESSMENT ID: EPD&C-2311X
 NASA FMEA #: 05-6MB-2026-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2311
 ITEM: SWITCH, FUEL CELL 1, 2, 3 REACTANTS

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] [] (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/26/87
 ASSESSMENT ID: EPD&C-2312X
 NASA FMEA #: 05-6MB-2027-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2312
 ITEM: SWITCH, H2 TANK 1-4 HEATER CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[]	[]	[]	[]
COMPARE	[/]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/26/87
 ASSESSMENT ID: EPD&C-2314X
 NASA FMEA #: 05-6MB-2028-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2314
 ITEM: SWITCH, O2 TANK 1-4 TEST/RESET CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[]
COMPARE	[/]	[]	[]	[]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

LOSS OF ABILITY TO "RESET" HEATERS. IOA CONCURS WITH NASA'S REEVALUATION. THIS ITEM SHOULD BE ON THE CIL.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/26/87
 ASSESSMENT ID: EPD&C-2315X
 NASA FMEA #: NONE

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2315
 ITEM: SWITCH, O2 TANK 1-4 TEST/RESET CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[/]	[]	[]	[]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

IOA CONCURS WITH NASA'S REEVALUATION. THIS ITEM SHOULD BE ON THE CIL.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/26/87
 ASSESSMENT ID: EPD&C-2316X
 NASA FMEA #: 05-6MB-2029-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2316
 ITEM: SWITCH, O2 TANK 1-4 HEATER CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/26/87
 ASSESSMENT ID: EPD&C-2317X
 NASA FMEA #: 05-6MB-2029-3

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2317
 ITEM: SWITCH, O2 TANK 1-4 HEATER CONTROL

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[F]	[P]	[X]
COMPARE	[N /]	[]	[N]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [X]
 INADEQUATE []

REMARKS:
 IOA CONCURS WITH NASA'S REEVALUATION.

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2350X
 NASA FMEA #: 05-6MB-2252-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2350
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2351X
 NASA FMEA #: 05-6MB-2252-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2351
 ITEM: DIODE, ISOLATION

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[3 /1R]	[P]	[F]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2352X
 NASA FMEA #: 05-6MB-2253-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2352
 ITEM: DIODE, ISOLATION; O2 "RESET" CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[2 /1R]	[P]	[P]	[P]	[X] *
IOA	[2 /1R]	[P]	[P]	[P]	[X]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2353X
 NASA FMEA #: 05-6MB-2253-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2353
 ITEM: DIODE, ISOLATION; O2 "RESET" CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[3 / 3]	[]	[]	[]	[]
COMPARE	[/]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2354X
 NASA FMEA #: 05-6MB-2254-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2354
 ITEM: DIODE, ISOLATION; H2 HEATER CIRCUIT (GSE/MDM)

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2355X
 NASA FMEA #: 05-6MB-2254-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2355
 ITEM: DIODE, ISOLATION; H2 HEATER CIRCUIT (GSE/MDM)

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[F]	[F]	[P]	[X] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2356X
 NASA FMEA #: 05-6MB-2255-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2356
 ITEM: DIODE, ISOLATION; H2 HEATER CIRCUIT (SWITCH)

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2357X
 NASA FMEA #: 05-6MB-2255-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2357
 ITEM: DIODE, ISOLATION; H2 HEATER CIRCUIT (SWITCH)

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2358X
 NASA FMEA #: 05-6MB-2256-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2358
 ITEM: DIODE, ISOLATION; O2 HEATER CIRCUIT (GSE/MDM)

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2359X
 NASA FMEA #: 05-6MB-2256-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2359
 ITEM: DIODE, ISOLATION; O2 HEATER CIRCUIT (GSE/MDM)

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[F]	[F]	[P]	[X] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2360X
 NASA FMEA #: 05-6MB-2257-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2360
 ITEM: DIODE, ISOLATION; O2 "TEST" CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2361X
 NASA FMEA #: 05-6MB-2257-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2361
 ITEM: DIODE, ISOLATION; O2 "TEST" CIRCUIT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /2R]	[F]	[F]	[P]	[X] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2362X
 NASA FMEA #: 05-6MB-2258-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2362
 ITEM: DIODE, ISOLATION; O2 HEATER CIRCUIT (SWITCH)

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[NA]	[P]	[] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2363X
 NASA FMEA #: 05-6MB-2258-2

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2363
 ITEM: DIODE, ISOLATION; O2 HEATER CIRCUIT (SWITCH)

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 /1R]	[P]	[F]	[P]	[X] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N /N]	[N]	[N]	[N]	[N]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2364X
 NASA FMEA #: 05-6MB-201400-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2364
 ITEM: H2 INSTRUMENTATION CIRCUIT, H2 TEMPERATURE AND
 PRESSURE READOUT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX C
ASSESSMENT WORKSHEET

ASSESSMENT DATE: 2/23/87
 ASSESSMENT ID: EPD&C-2365X
 NASA FMEA #: 05-6MB-201500-1

NASA DATA:
 BASELINE []
 NEW [X]

SUBSYSTEM: EPD&C
 MDAC ID: 2365
 ITEM: O2 INSTRUMENTATION CIRCUIT; O2 TEMPERATURE AND
 PRESSURE READOUT

LEAD ANALYST: J. PATTON

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[3 / 3]	[]	[]	[]	[] *
IOA	[/]	[]	[]	[]	[]
COMPARE	[N / N]	[]	[]	[]	[]

RECOMMENDATIONS: (If different from NASA)

[/] [] [] [] []
 (ADD/DELETE)

* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE []
 INADEQUATE []

REMARKS:

APPENDIX D

CRITICAL ITEMS

**APPENDIX D
CRITICAL ITEMS**

<u>NASA FMEA</u>	<u>MDAC ID</u>	<u>ITEM</u>	<u>FAILURE MODE</u>
05-6MA-2039-4	2288	SWITCH, FUEL CELL 1,2,3 START/STOP CONTROL	INADVERTANT OPERATION I "STOP" POSITION, SHORTS
05-6MA-2040-1	2009	SWITCH, FUEL CELL 1,2,3 CONTROLLER	FAILS TO TRANSFER, FAIL TO CONDUCT, FAIL TO CLO
05-6MA-2100-1	2011	RESISTORS, 1.2K	ELEMENT OPENS, HI-RESIS
05-6MA-2207-2	2033	HDC, TYPE 1, AR10, 11, 9, 10	INADVERTANT OUTPUT, SHO INTERNALLY, CONDUCTS PREMATURELY
05-6MA-2001-4	2280	CIRCUIT BREAKERS, FC 1,2, 3 THERMAL	SHORTS, FAILS CLOSED "STOP" POSITION, SHORTS
05-6MA-2032-1	2057	SWITCH, FUEL CELL PURGE HEATER	FAILS TO TRANSFER, FAIL TO CLOSE, FAILS TO COND
05-6MA-2201-2	2092	HDC TYPE III AR1, AR2	INADVERTENT OUTPUT, SHO INTERNALLY, CONDUCTS PREMATURELY
05-6MA-2202-2	2094	HDC TYPE III AR3, AR4	INADVERTENT OUTPUT, SHO INTERNALLY, CONDUCTS PREMATURELY
05-6MA-2011-1	2118	FUSE , 3 AMP	OPEN, INADVERTENTLY OPE
05-6MA-2205-1	2121	HDC TYPE III AR8, AR7	LOSS OF OUTPUT, FAIL TO CONDUCT, INADVERTANT OP SHORT TO GROUND
05-6MA-2254-1	2123	DIODE, BLOCKING 3 AMP	OPEN
05-6MA-2122-1	2207	FCP 1, 2, 3 HTR PWR ON IND. 5.1K RESISTOR	OPEN, ELEMENT OPENS, HI RESIST
05-6MB-2251-1	2243	DIODE, ISOLATION	OPEN, FAILS OPEN, FAILS CONDUCT
05-6MB-2253-1	2352	DIODE ISOLATION; O2 "RESET" CIRCUIT	OPEN, FAILS OPEN, FAILS CONDUCT
05-6MB-2252-2	2268	FCP 1 REACTANT VLV CNTL CIRCUIT	INADVERTENT OUTPUT, CONDUCTS PREMATURELY, INTERNAL SHORT, FAIL TO CLOSE

**APPENDIX D
CRITICAL ITEMS (continued)**

<u>NASA FMEA</u>	<u>MDAC ID</u>	<u>ITEM</u>	<u>FAILURE MODE</u>
05-6MB-2252-2	2270	FCP 2 REACTANT VLV CNTL CKT	INADVERTENT OUTPUT, CONDUCTS PREMATURELY, INTERNAL SHORT, FAIL TO CLOSE
05-6MB-2080-2	2276	H2 HEATER A&B CONTROL CIRCUITS	INADVERTENT OPEN, CONDU PREMATURELY, INTERNAL S FAILS CLOSE
05-6MB-2031-1	2263A 2263B	H2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT	OPEN CIRCUIT, LOSS OF POWER, SHORT TO GND
05-6MB-2031-2	2263C	H2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT	OPEN CIRCUIT, LOSS OF POWER, SHORT TO GND
05-6MB-2031-3	2263	H2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT	OPEN CIRCUIT, LOSS OF POWER, SHORT TO GND
05-6MB-2031-1	2264	H2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT	INADVERTENT OUTPUT, CONDUCTS PREMATURELY, INTERNAL SHORT, FAILS TO CLOSE
05-6MB-2031-1	2261A 2261B	H2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT	OPEN CIRCUIT, LOSS OF POWER, SHORT TO GND
05-6MB-2051-1	2261	H2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT	OPEN CIRCUIT, LOSS OF POWER, SHORT TO GND
05-6MB-2031-1	2262	H2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT	INADVERTENT OUTPUT, CONDUCTS PREMATURELY, INTERNAL SHORT, FAILS T CLOSE
05-6MB-2202-1	2241	HDC, FUEL CELL 1, 2, 3 CLOSE CONTROL	LOSS OF OUTPUT, FAILS T CONDUCT, INADVERTENTLY OPENS
05-6MB-2202-2	2242	HDC, FUEL CELL 1, 2, 3 CLOSE CONTROL	INADVERTENT OUTPUT, SHO INTERNALLY, CONDUCTS PREMATURELY
05-6MB-2201-2	2240	HDC, FUEL CELL 1, 2, 3 OPEN CONTROL	INADVERTENT OUTPUT, LS T CONDUCT, INADVERTENTLY
05-6MB-2203-2	2248	HDC, O2 HTR A&B CONTROL	INADVERTENT OUTPUT, SHO INTERNALLY, CONDUCTS PREMATURELY

**APPENDIX D
CRITICAL ITEMS (conctinued)**

<u>NASA FMEA</u>	<u>MDAC ID</u>	<u>ITEM</u>	<u>FAILURE MODE</u>
05-6MB-2045-3	2253A	O2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT	OPEN CIRCUIT, LOSS OF POWER, SHORTS TO GND
05-6MB-2077-1	2253	O2 MAIFOLD 1 ISOLATION VLV CNTL CIRCUIT	OPEN CIRCUIT, LOSS OF POWER, SHORTS TO GND
05-6MB-2044-2	2254	O2 MANIFOLD 1 ISOLATION VLV CNTL CIRCUIT	INADVERTENT OUTPUT, CONDUCTS PREMATURELY, INTERNAL SHORT, FAILS CLOSE
05-6MB-2077-1	2265	H2 MANIFOLD 2 ISOLATION VLV CNTL CIRCUIT	OPEN CIRCUIT, LOSS OF POWER, SHORTS TO GND
05-6MB-2176-2	2236	REMOTE POWER CONTROLLER 10A	INADVERTENT OUTPUT, SH CONDUCTS PREMATURELY
05-6MB-2177-2	2238	REMPOTE POWER CONTROLLER 5A	INADVERTENT OJUTPUT, S CONDUCTS PREMATURELY
05-6MB-2076-1	2233	RESISTORS, 1.2 KOHM, 2 WATT	OPEN, ELEMENT OPENS
05-6MB-2026-1	2221	SWITCH, FUEL CELL 1, 2, 3 REACTANTS	FAIL TO TRANSFER, FAIL CONDUCT, FAIL TO CLOSE
05-6MB-2026-3	2222	SWITCH, FUEL CELL 1, 2, 3 REACTANTS	SHORTS, INADVERTENTLY CLOSES
05-6MB-2026-2	2310	SWITCH, FUEL CELL 1, 2, 3 REACTANTS	SHORTS IN "OPEN" POSITI INADVERTENTLY CLOSES IN "OPEN" POSITION
05-6MB-2026-3	2311	SWITCH, FUEL CELL 1, 2, 3 REACTANTS	SHORTS IN "CLOSED" POSITION, INADVERTENTLY CLOSE IN "CLOSE" POSITI
05-6MB-2027-2	2312	SWITCH, H2 TANK 1-4 HEATER CONTROL	SHORTS IN "ON" POSITION INADVERTENTLY CLOSES IN "ON" POSITION
05-6MB-2027-3	2313	SWITCH, H2 TANK 1-4 HEATER CONTROL	SHORTS IN "AUTO" POSITI INADVERTENTLY CLOSES IN "AUTO" POSITION
05-6MB-2027-2	2224	SWITCH, H2 TANK 1-4 PRIMARY HEATER CONTROL	SHORTS, INADVERTENTLY CLOSES

**APPENDIX D
CRITICAL ITEMS (concluded)**

<u>NASA FMEA</u>	<u>MDAC ID</u>	<u>ITEM</u>	<u>FAILURE MODE</u>
05-6MB-2027-2	2226	SWITCH, H2 TANK 1-4 STANDBY HEATER CONTROL	SHORTS, INADVERTENTLY CLOSES "AUTO" POSITION
05-6MB-2029-2	2230	SWITCH, H2 TANK 1-4 PRIMARY HEATER CONTROL	SHORTS, INADVERTENTLY CLOSES
05-6MB-2029-2	2232	SWITCH, O2 TANK 1-4 STANDBY HEATER CONTROL	SHORTS, INADVERTENTLY CLOSES
05-6MB-2028-1	2227	SWITCH, O2 TANK 1-4 TEST/RESET CONTROL	FAIL TO TRANSFER, FAIL TO CONDUCT, FAIL TO CLOSE
05-6MB-2028-2	2314	SWITCH, O2 TANK 1-4 TEST/RESET CONTROL	SHORTS, IN "TEST" POSIT INADVERTENTLY CLOSES IN "TEST" POSITION

**APPENDIX E
DETAILED ANALYSIS**

This section contains the IOA analysis worksheets generated during the analysis of this subsystem. The information on these worksheets is intentionally similar to the NASA FMEA's. Each of these sheets identifies the hardware item being analyzed, and parent assembly, as well as the function. For each failure mode, the possible causes are outlined, and the assessed hardware and functional criticality for each mission phase is listed, as described in the NSTS 22206 Instructions for Preparation of FMEA and CIL, 10 October 1986. Finally, effects are entered at the bottom of each sheet, and the worst case criticality is entered at the top.

LEGEND FOR IOA ANALYSIS WORKSHEETS

Hardware Criticalities:

- 1 = Loss of life or vehicle
- 2 = Loss of mission or next failure of any redundant item (like or unlike) could cause loss of life/vehicle
- 3 = All others

Functional Criticalities:

- 1R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of life or vehicle.
- 2R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of mission.

Redundancy Screen A:

- 1 = Is Checked Out PreFlight
- 2 = Is Capable of Check Out PreFlight
- 3 = Not Capable of Check Out PreFlight
- NA = Not Applicable

Redundancy Screens B and C:

- P = Passed Screen
- F = Failed Screen
- NA = Not Applicable

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/28/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2280 ABORT: 3/1R

ITEM: CIRCUIT BREAKERS, FC #1, #2, #3 THERMAL
FAILURE MODE: SHORTS, FAILS CLOSED

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3) PNL L4
- 4) CB65, CB66, CB67 (REF)
- 5)
- 6)
- 7)
- 8) RCS
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [F] C [P]

LOCATION: 31V73A4CB65, 66, 67, 68, 69, 70, 71, 72, 73
PART NUMBER: MC454-0026-2030

CAUSES: STRUCTURAL FAILURE, CONTAMINATION, MECHANICAL SHOCK,
VIBRATION

EFFECTS/RATIONALE:

LOSS OF CURRENT PROTECTION TO FUEL CELL PUMP FROM BUS. POSSIBLE
LOSS OF CREW/VEHICLE WITH LOSS OF FCP.

REFERENCES: ALSO CIRCUIT BREAKERS CB68, CB69, CB70, CB71, CB72,
CB73.

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 2281 ABORT: 2/1R

ITEM: SWITCH, FUEL CELL PURGE HEATER
FAILURE MODE: FAILS IN OFF

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3) PNL R12A1
- 4) SWITCH S2
- 5)
- 6)
- 7)
- 8) RCS
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A12A1S2
PART NUMBER: ME452-0102-7306

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

LOSS OF ABILITY TO HEAT LINES OF FCP PURGE. PLUGGING OF LINES
DUE TO FREEZING WILL CAUSE FLOODING OF FCP AND POSSIBLE LOSS OF
CREW/VEHICLE DUE TO LOSS OF FCP.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 2282 ABORT: 3/3

ITEM: FCP 1,2,3, HTR PWR ON IND 5.1K RESISTOR
FAILURE MODE: PARAMETER DEVIATION, OUT OF TOLERANCE, LO-RESIST,
SHORT

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3) TERM BD 40TB134, 135, 136
- 4) RESISTOR, MODULE ASSY 5.1K OHMS
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: TB134, 135, 136
PART NUMBER: RLR07C5101GR

CAUSES: CONTAMINATION, THERMAL STRESS, VIBRATION, MECHANICAL SHOCK

EFFECTS/RATIONALE:

LOSS OF ABILITY TO MEASURE STATUS OF FCP END CELL HTR. NO EFFECT. ALTERNATE MEASUREMENT METHODS AVAILABLE.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2283 ABORT: 3/1R

ITEM: EVENT INDICATOR, FC GPC PURGE SEQ DS1
FAILURE MODE: SHORTED

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3) PNL R12A1
- 4) EVENT INDICATOR DS1
- 5)
- 6)
- 7)
- 8) PSA
- 9) 05-6MA

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A12A1DS1
PART NUMBER: MC432-0222-0027

CAUSES: VIBRATION, MECHANICAL SHOCK, STRUCTURAL FAILURE, LOSS OF INPUT

EFFECTS/RATIONALE:
LOSS OF ABILITY TO DO AUTO PURGE. POSSIBLE LOSS OF MISSION DUE TO FCP PERFORMANCE DEGRADATION.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/2R
MDAC ID: 2284 ABORT: 3/2R

ITEM: SWITCH, FUEL CELL PURGE VALVES
FAILURE MODE: JAMMED IN OFF POSITION

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3) PNL R12A1
- 4) SWITCH S3, S4, S5
- 5)
- 6)
- 7)
- 8) RCS
- 9) 05-6MA

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/2R
LIFTOFF:	3/2R	TAL:	3/2R
ONORBIT:	3/2R	AOA:	3/2R
DEORBIT:	3/2R	ATO:	3/2R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A12A1S3, 32V73A12A1S4, 32V73A12A1S5
PART NUMBER: ME452-0102-7306

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

INABILITY TO PURGE FCP. DEGRADATION OF FUEL CELL PERFORMANCE AND
POSSIBLE LOSS OF MISSION.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2286 ABORT: 3/1R

ITEM: SWITCH, FUEL CELL 1,2,3 START/STOP CONTROL
FAILURE MODE: FAILS TO TRANSFER IN "STOP" POSITION, FAILS TO
CLOSE

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3) PNL R1A2
- 4) SWITCH S16, S17, S18
- 5)
- 6)
- 7)
- 8) PSA
- 9) 05-6MA

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A2S16, 32V73A1A2S17, 32V73A1A2S18
PART NUMBER: ME452-0102-7355

CAUSES: STRUCTURAL FAILURE, CONTAMINATION

EFFECTS/RATIONALE:

LOSS OF ABILITY TO SHUTDOWN A FUEL CELL. MULTIPLE FCP FAILURES
COULD RESULT IN REACTANT CROSSOVER IN AFFECTED FCP AND POSSIBLE
LOSS OF CREW/VEHICLE.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2287 ABORT: 3/1R

ITEM: SWITCH, FUEL CELL 1,2,3 START/STOP CONTROL
FAILURE MODE: INADVERTENT OPERATION IN "START" POSITION

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3) PNL R1A2
- 4) SWITCH S16, S17, S18
- 5)
- 6)
- 7)
- 8) PSA
- 9) 05-6MA

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A2S16, 32V73A1A2S17, 32V73A1A2S18
PART NUMBER: ME452-0102-7355

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

LOSS OF ABILITY TO STOP A FCP. MULTIPLE FAILURES CAN LEAD TO POSSIBLE LOSS OF CREW/VEHICLE AFTER A REACTANT CROSSOVER OCCURS IN AFFECTED FCP.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/11/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2288 ABORT: 3/1R

ITEM: SWITCH, FUEL CELL 1,2,3 START/STOP CONTROL
FAILURE MODE: INADVERTENT OPERATION IN "STOP" POSITION, SHORTS

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3) PNL R1A2
- 4) SWITCH S16, S17, S18
- 5)
- 6)
- 7)
- 8) PSA
- 9) 05-6MA

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [1] B [P] C [P]

LOCATION: 32V73A1A2S16, 32V73A1A2S17, 32V73A1A2S18
PART NUMBER: ME452-0102-7355

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

FUEL CELL WOULD STOP PREMATURELY. LOSS OF ABILITY TO
START/RESTART AFFECTED FCP. POSSIBLE LOSS OF CREW/VEHICLE.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 2289 ABORT: /

ITEM: REFERENCE JUNCTION, H2O NOZZLE A CONTROLLER
FAILURE MODE: FAILS LOW

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [NA] B [NA] C [NA]

LOCATION:
PART NUMBER: MC476-0133-0001

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2290 ABORT: /

ITEM: REFERENCE JUNCTION, H2O NOZZLE A CONTROLLER
FAILURE MODE: FAILS HIGH

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/1R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/1R		

REDUNDANCY SCREENS: A [2] B [NA] C [P]

LOCATION:

PART NUMBER: MC476-0133-0001

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 2291 ABORT: /

ITEM: REFERENCE JUNCTION, H2O NOZZLE B CONTROLLER
FAILURE MODE: FAILS LOW

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [NA] B [NA] C [NA]

LOCATION:

PART NUMBER: MC476-0133-0001

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2292 ABORT: /

ITEM: REFERENCE JUNCTION, H2O NOZZLE B CONTROLLER
FAILURE MODE: FAILS HIGH

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/1R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/1R		

REDUNDANCY SCREENS: A [2] B [NA] C [P]

LOCATION:

PART NUMBER: MC476-0133-0001

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

C-5

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2293 ABORT: /

ITEM: FUSE, 10 AMP
FAILURE MODE: OPEN

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/1R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/1R		

REDUNDANCY SCREENS: A [2] B [NA] C [P]

LOCATION:
PART NUMBER: ME451-0018-1000

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES: (OV-102 ONLY)

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 2294 ABORT: /

ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER CIRCUIT
A
FAILURE MODE: E OUTPUT FAIL OFF/ON

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [NA] B [NA] C [NA]

LOCATION:

PART NUMBER: ME450-0062-0002

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 2295 ABORT: /

ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER CIRCUIT
A
FAILURE MODE: H OUTPUT FAILS OFF

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [NA] B [NA] C [NA]

LOCATION:
PART NUMBER: ME450-0062-0002

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2296 ABORT: /

ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER CIRCUIT
A
FAILURE MODE: H OUTPUT FAILS ON

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/1R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/1R		

REDUNDANCY SCREENS: A [2] B [NA] C [P]

LOCATION:

PART NUMBER: ME450-0062-0002

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2297 ABORT: /

ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER CIRCUIT
B
FAILURE MODE: E OUTPUT FAILS OFF

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/1R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/1R		

REDUNDANCY SCREENS: A [2] B [NA] C [P]

LOCATION:
PART NUMBER: ME450-0062-0002

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2298 ABORT: /

ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER CIRCUIT
B
FAILURE MODE: E OUTPUT FAILS ON

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/1R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/1R		

REDUNDANCY SCREENS: A [2] B [NA] C [0]

LOCATION:

PART NUMBER: ME450-0062-0002

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2299 ABORT: /

ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER CIRCUIT
B
FAILURE MODE: N OUTPUT FAILS OFF

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/1R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/1R		

REDUNDANCY SCREENS: A [2] B [NA] C [P]

LOCATION:
PART NUMBER: ME450-0062-0002

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 2300 ABORT: /

ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER CIRCUIT
B
FAILURE MODE: N OUTPUT FAILS ON

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [NA] B [NA] C [NA]

LOCATION:

PART NUMBER: ME450-0062-0002

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 2301 ABORT: /

ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER CIRCUIT
B
FAILURE MODE: H OUTPUT FAILS OFF

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [NA] B [NA] C [NA]

LOCATION:

PART NUMBER: ME450-0062-0002

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/18/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2302 ABORT: /

ITEM: TEMPERATURE CONTROLLER, DUMP NOZZLE HEATER CIRCUIT
B
FAILURE MODE: H OUTPUT FAILS ON

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) FUEL CELL
- 3)
- 4)
- 5)
- 6)
- 7)
- 8) WRS
- 9) 05-6MA

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/1R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/1R		

REDUNDANCY SCREENS: A [2] B [NA] C [P]

LOCATION:

PART NUMBER: ME450-0062-0002

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 2310 ABORT: /

ITEM: SWITCH, FUEL CELL 1, 2, 3 REACTANTS
FAILURE MODE:

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 2311 ABORT: /

ITEM: SWITCH, FUEL CELL 1, 2, 3 REACTANTS
FAILURE MODE:

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [2] B [P] C [P]

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM: EPD&C	FLIGHT:	2/1R
MDAC ID: 2312	ABORT:	/

ITEM: SWITCH, H2 TANK 1-4 HEATER CONTROL
FAILURE MODE:

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 2313 ABORT: /

ITEM: SWITCH, H2 TANK 1-4 HEATER CONTROL
FAILURE MODE:

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM: EPD&C	FLIGHT:	2/1R
MDAC ID: 2314	ABORT:	/

ITEM: SWITCH, O2 TANK 1-4 TEST/RESET CONTROL
FAILURE MODE:

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [2] B [P] C [P]

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 2315 ABORT: /

ITEM: SWITCH, O2 TANK 1-4 TEST/RESET CONTROL
FAILURE MODE:

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [2] B [P] C [: P]

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM: EPD&C	FLIGHT:	2/1R
MDAC ID: 2316	ABORT:	/

ITEM: SWITCH, O2 TANK 1-4 HEATER CONTROL
FAILURE MODE:

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [2] B [P] C [P]

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 2/1R
MDAC ID: 2317 ABORT: /

ITEM: SWITCH, O2 TANK 1-4 HEATER CONTROL
FAILURE MODE:

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE:	2/23/87	HIGHEST CRITICALITY	HDW/FUNC
SUBSYSTEM:	EPD&C	FLIGHT:	3/3
MDAC ID:	2350	ABORT:	/

ITEM: DIODE, ISOLATION
FAILURE MODE: OPEN, FAILS OPEN, FAILS TO CONDUCT

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3) MID PCA 1, 2 & 3
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER: JANTXV1N4246

CAUSES:

EFFECTS/RATIONALE:

REFERENCES: 40V76A25A1CR32,34,36,38, 6A1CR32,34,36,38,
7A1CR16,18,20,22

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/1R
MDAC ID: 2351 ABORT: /

ITEM: DIODE, ISOLATION
FAILURE MODE: SHORTS, INTERNAL SHORT (DOES NOT BLOCK)

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3) MID PCA 1, 2 & 3
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [2] B [F] C [P]

LOCATION: (REF)
PART NUMBER: JANTXV1N4246

CAUSES:

EFFECTS/RATIONALE:

REFERENCES: 40V76A25A1CR32,34,36,38, 6A1CR32,34,36,38,
7A1CR16,18,20,22

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: 3/3
MDAC ID: 2353 ABORT: /

ITEM: DIODE, ISOLATION; O2 "RESET" CIRCUIT
FAILURE MODE: SHORTS, INTERNAL SHORT (DOES NOT BLOCK)

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3) H2/O2 CONTROL BOX 1,2,3,4
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87
SUBSYSTEM: EPD&C
MDAC ID: 2354

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: /
ABORT: /

ITEM: DIODE, ISOLATION; H2 HEATER CIRCUIT (GSE/MDM)
FAILURE MODE: OPEN, FAILS OPEN, FAILS TO CONDUCT

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: /
MDAC ID: 2355 ABORT: /

ITEM: DIODE, ISOLATION; H2 HEATER CIRCUIT (GSE/MDM)
FAILURE MODE: SHORTS, INTERNAL SHORT (DOES NOT BLOCK)

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: /
MDAC ID: 2356 ABORT: /

ITEM: DIODE, ISOLATION; H2 HEATER CIRCUIT (SWITCH)
FAILURE MODE: OPEN, FAILS OPEN, FAILS TO CONDUCT

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: /
MDAC ID: 2358 ABORT: /

ITEM: DIODE, ISOLATION; O2 HEATER CIRCUIT (GSE/MDM)
FAILURE MODE: OPEN, FAILS OPEN, FAILS TO CONDUCT

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: /
MDAC ID: 2359 ABORT: /

ITEM: DIODE, ISOLATION; O2 HEATER CIRCUIT (GSE/MDM)
FAILURE MODE: SHORTS, INTERNAL SHORT (DOES NOT BLOCK)

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

CRITICALITIES

FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87
SUBSYSTEM: EPD&C
MDAC ID: 2360

HIGHEST CRITICALITY HDW/FUNC
FLIGHT: /
ABORT: /

ITEM: DIODE, ISOLATION; O2 "TEST" CIRCUIT
FAILURE MODE: OPEN, FAILS OPEN, FAILS TO CONDUCT

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
 SUBSYSTEM: EPD&C FLIGHT: /
 MDAC ID: 2361 ABORT: /

ITEM: DIODE, ISOLATION; O2 "TEST" CIRCUIT
 FAILURE MODE: SHORTS, INTERNAL SHORT (DOES NOT BLOCK)

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
 PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: /
MDAC ID: 2362 ABORT: /

ITEM: DIODE, ISOLATION; O2 HEATER CIRCUIT (SWITCH)
FAILURE MODE: OPEN, FAILS OPEN, FAILS TO CONDUCT

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: /
MDAC ID: 2363 ABORT: /

ITEM: DIODE, ISOLATION; O2 HEATER CIRCUIT (SWITCH)
FAILURE MODE: SHORTS, INTERNAL SHORT (DOES NOT BLOCK)

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4) DIODES (REF)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MB

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION: (REF)
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: /
MDAC ID: 2365 ABORT: /

ITEM: O2 INSTRUMENTATION CIRCUIT; O2 TEMPERATURE AND
PRESSURE READOUT
FAILURE MODE: ALL CREDIBLE MODES

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: /
MDAC ID: 2366 ABORT: /

ITEM: O2 CURRENT LEVEL DETECTION CIRCUIT
FAILURE MODE: FAILS OPEN

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 2/23/87 HIGHEST CRITICALITY HDW/FUNC
SUBSYSTEM: EPD&C FLIGHT: /
MDAC ID: 2367 ABORT: /

ITEM: O2 CURRENT LEVEL DETECTION CIRCUIT
FAILURE MODE: INTERNAL SHORT

LEAD ANALYST: J. PATTON SUBSYS LEAD: K. SCHMECKPEPER

BREAKDOWN HIERARCHY:

- 1) EPG
- 2) PRSDS
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9) 05-6MA

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	/	RTLS:	/
LIFTOFF:	/	TAL:	/
ONORBIT:	/	AOA:	/
DEORBIT:	/	ATO:	/
LANDING/SAFING:	/		

REDUNDANCY SCREENS: A [] B [] C []

LOCATION:
PART NUMBER:

CAUSES:

EFFECTS/RATIONALE:

REFERENCES:

APPENDIX F

NASA FMEA TO IOA WORKSHEET CROSS REFERENCE/RECOMMENDATIONS

This section provides a cross reference between the NASA FMEA and corresponding IOA analysis worksheet(s) included in Appendix E. The Appendix F identifies: NASA FMEA Number, IOA Assessment Number, NASA criticality and redundancy screen data, and IOA recommendations.

Appendix F Legend

Code Definition

- 1 IOA issue.
- 2 IOA recommends generating a FMEA for the subject failure mode.
- 3 IOA concurs with NASA's reevaluation.
- 4 IOA recommends deleting the IOA failure mode.

ORIGINAL PAGE IS
OF POOR QUALITY

APPENDIX F

NASA FMEA TO IOA WORKSHEET CROSS REFERENCE / RECOMMENDATIONS

IDENTIFIERS		NASA			IOA RECOMMENDATIONS *			
NASA FMEA NUMBER	IOA ASSESSMENT NUMBER	CRIT HW/F	SCREENS A B C	CRIT HW/F	SCREENS A B C	OTHER (SEE LEGEND CODE)	ISSUE	
05-SMA-2001-1	EPD&C-2084	3/1R	P P P	/			3	
	EPD&C-2095	3/1R	P P P	/				
	EPD&C-2104	3/1R	P P P	/				
05-SMA-2001-4	EPD&C-2280X	3/1R	P F P	/			3	
05-SMA-2004-1	EPD&C-2134	3/3		/			3	
	EPD&C-2142	3/3		/			3	
05-SMA-2006-1	EPD&C-2156	3/1R	P NA P	/			3	
05-SMA-2007-1	EPD&C-2157	3/1R	P NA P	/			3	
05-SMA-2008-1	EPD&C-2113	3/2R	P P P	/			3	
05-SMA-2009-1	EPD&C-2114	3/2R	P P P	/			3	
05-SMA-2010-1	EPD&C-2170	3/1R	P NA P	/			3	
	EPD&C-2173	3/1R	P NA P	/			3	
	EPD&C-2176	3/1R	P NA P	/			3	
	EPD&C-2179	3/1R	P NA P	/			3	
	EPD&C-2182	3/1R	P NA P	/			3	
	EPD&C-2185	3/1R	P NA P	/			3	
05-SMA-2011-1	EPD&C-2118	2/1R	P P P	/				
05-SMA-2012-1	EPD&C-2115	3/3		/			3	
05-SMA-2013-1	EPD&C-2136	3/3		/			3	
	EPD&C-2139	3/3		/			3	
	EPD&C-2143	3/3		/			3	
	EPD&C-2146	3/3		/			3	
	EPD&C-2149	3/3		/			3	
	EPD&C-2153	3/3		/			3	
05-SMA-2019-1	EPD&C-2115A	3/2R	P P F	/			3	
05-SMA-2021-1	EPD&C-2057	3/1R	P P P	/			3	
05-SMA-2022-1	EPD&C-2128	3/1R	P NA P	/			3	
05-SMA-2023-1	EPD&C-2167	3/3		/			3	
05-SMA-2023-1	EPD&C-2175	3/1R	P P P	/			3	
	EPD&C-2182	3/1R	P P P	/			3	
05-SMA-2031-1	EPD&C-2053	3/1R	P P P	/				
05-SMA-2031-2	EPD&C-2054	3/3		/				
05-SMA-2032-1	EPD&C-2057	3/2		/			3	
05-SMA-2032-2	EPD&C-2059	3/3		/				
05-SMA-2032-3	EPD&C-2281X	2/2		/			3	
05-SMA-2033-1	EPD&C-2085	3/2P	P P P	/				
05-SMA-2033-2	EPD&C-2086	3/2R	P P P	/				
05-SMA-2033-3	EPD&C-2294X	3/2R	P P P	/				
05-SMA-2034-1	EPD&C-2013	3/3		/				
05-SMA-2034-2	EPD&C-2013A	3/3		/				
05-SMA-2035-1	EPD&C-2014	3/3		/			3	
05-SMA-2035-2	EPD&C-2015	3/3		/			3	
05-SMA-2037-1	EPD&C-2132	3/3		/			3	
05-SMA-2037-2	EPD&C-2137	3/3		/				
05-SMA-2038-1	EPD&C-2158	3/1R	P NA P	/			3	

ORIGINAL PAGE IS
OF POOR QUALITY

IDENTIFIERS		NASA			IDA RECOMMENDATIONS †				ISSUE	
NASA FNEA NUMBER	IDA ASSESSMENT NUMBER	CRIT HW/F	SCREENS A B C			CRIT HW/F	SCREENS A B C			OTHER (SEE LEGEND CODE)
05-6MA-2038-2	EPD&C-2159	3/1R	P	NA	P	/				3
05-6MA-2039-1	EPD&C-2285X	3/1R	P	NA	P	/				3
05-6MA-2039-2	EPD&C-2286X	3/1R	P	NA	P	/				3
05-6MA-2039-3	EPD&C-2297X	3/1R	P	NA	P	/				3
05-6MA-2039-4	EPD&C-2258X	2/1R	F	P	P	/				3
05-6MA-2040-1	EPD&C-2009	2/1R	P	P	P	/				3
05-6MA-2040-2	EPD&C-2010	3/1R	P	NA	P	/				3
05-6MA-2043-1	EPD&C-2037	3/3				/				
	EPD&C-2038	3/3				/				
05-6MA-2044-1	EPD&C-2199	3/3				3/1R	P	P	P	3
05-6MA-2044-2	EPD&C-2200	3/3				/				
05-6MA-2045-1	EPD&C-2201	3/1R	P	P	P	/				3
05-6MA-2045-2	EPD&C-2202	3/1R	P	NA	P	/				3
05-6MA-2046-1	EPD&C-2203	3/1R	P	NA	P	/				3
05-6MA-2046-2	EPD&C-2204	3/1R	P	NA	P	/				3
05-6MA-2076-1	EPD&C-2065A	3/1R	P	P	P	/				3
05-6MA-2077-1	EPD&C-2055	3/1R	P	P	P	/				
05-6MA-2077-2	EPD&C-2056	3/3				/				4
05-6MA-2078-1	EPD&C-2005	3/1R	P	NA	P	/				3
	EPD&C-2007	3/1R	P	NA	P	/				3
05-6MA-2078-2	EPD&C-2006	3/3				/				
	EPD&C-2008	3/3				/				
05-6MA-2079-1	EPD&C-2003	3/1R	P	NA	P	/				3
05-6MA-2079-2	EPD&C-2004	3/3				/				
05-6MA-2084-1	EPD&C-2002	3/3				/				
	EPD&C-2020	3/3				/				
05-6MA-2087-1	EPD&C-2087	3/2R	P	NA	P	/				3
	EPD&C-2096	3/2R	P	NA	P	/				3
	EPD&C-2105	3/2R	P	NA	P	/				3
05-6MA-2087-2	EPD&C-2088	3/3				/				
	EPD&C-2097	3/3				/				
	EPD&C-2106	3/3				/				
05-6MA-2088-1	EPD&C-2089	3/2R	P	P	P	/				3
	EPD&C-2098	3/2R	F	P	P	/				3
	EPD&C-2107	3/2R	P	P	P	/				3
05-6MA-2088-2	EPD&C-2090	/				/				3
	EPD&C-2099	/				/				3
	EPD&C-2108	/				/				3
05-6MA-2093-1	EPD&C-2016	3/3				/				
05-6MA-2093-2	EPD&C-2016A	3/3				/				
05-6MA-2094-1	EPD&C-2019	3/3				/				
05-6MA-2095-1	EPD&C-2017	3/3				3/1R	P	P	P	3
05-6MA-2095-2	EPD&C-2018	3/3				/				
05-6MA-2099-1	EPD&C-2152	3/3				/				
	EPD&C-2153	3/3				/				
05-6MA-2100-1	EPD&C-2011	3/1R	F	P	P	/				
05-6MA-2100-2	EPD&C-2012	3/3				/				
05-6MA-2104-1	EPD&C-2077	3/3				/				
	EPD&C-2078	3/3				/				
	EPD&C-2079	3/3				/				

ORIGINAL PAGE IS
OF POOR QUALITY

IDENTIFIERS		NASA			IDA RECOMMENDATIONS			ISSUE
NASA FMEA NUMBER	IDA ASSESSMENT NUMBER	CRIT HW/F	SCREENS A B C	CRIT HW/F	SCREENS A B C	OTHER (SEE LEGEND CODE)	ISSUE	
05-6MA-2104-1	EPD&C-2080	3/3		/				
05-6MA-2105-1	EPD&C-2130	3/3		/				
05-6MA-2105-2	EPD&C-2131	3/3		/				
05-6MA-2106-1	EPD&C-2021	3/3		/				
05-6MA-2106-2	EPD&C-2021A	3/3		/				
05-6MA-2107-1	EPD&C-2119	3/3		/				
	EPD&C-2120	3/3		/				
05-6MA-2117-1	EPD&C-2061	3/1R	P NA P	/			3	
	EPD&C-2063	3/1R	P NA P	/			3	
05-6MA-2117-2	EPD&C-2062	3/3		/				
	EPD&C-2064	3/3		/				
05-6MA-2119-1	EPD&C-2065	3/3		/			3	
	EPD&C-2066	3/3		/				
05-6MA-2120-1	EPD&C-2059	3/1R	P P P	/			3	
05-6MA-2121-1	EPD&C-2168	3/3		/				
05-6MA-2121-2	EPD&C-2169	/		/			4	
05-6MA-2122-1	EPD&C-2207	2/1R	P F P	/			3	
05-6MA-2122-2	EPD&C-2282X	3/3		/				
05-6MA-2151-1	EPD&C-2036	3/3		/				
05-6MA-2151-2	EPD&C-2036A	3/3		/				
05-6MA-2151-3	EPD&C-2283X	3/1R	P P P	/				
05-6MA-2152-1	EPD&C-2034	3/3		/				
05-6MA-2152-2	EPD&C-2034A	3/3		/				
05-6MA-2155-1	EPD&C-2035	3/3		/				
05-6MA-2155-2	EPD&C-2035A	3/3		/				
05-6MA-2158-1	EPD&C-2039	3/3		/				
	EPD&C-2040	3/3		/				
05-6MA-2177-1	EPD&C-2067	3/1R	P NA P	/			3	
	EPD&C-2069	3/1R	P NA P	/			3	
05-6MA-2177-2	EPD&C-2068	3/3		/				
	EPD&C-2070	3/3		/				
05-6MA-2180-1	EPD&C-2071	3/1R	P NA P	/			3	
	EPD&C-2073	3/1R	P NA P	/			3	
05-6MA-2180-2	EPD&C-2072	3/3		/				
	EPD&C-2074	3/3		/				
05-6MA-2201-1	EPD&C-2091	3/2R	P NA P	/			3	
	EPD&C-2100	3/2R	P NA P	/			3	
	EPD&C-2109	3/2R	P NA P	/			3	
05-6MA-2201-2	EPD&C-2092	3/2R	P F P	/			3	
	EPD&C-2101	3/2R	P F P	/			3	
	EPD&C-2110	3/2R	P F P	/			3	
05-6MA-2202-1	EPD&C-2093	3/2R	P NA P	/			3	
	EPD&C-2102	3/2R	P NA P	/			3	
	EPD&C-2111	3/2R	P NA P	/			3	
05-6MA-2202-2	EPD&C-2094	3/2R	P F P	/			3	
	EPD&C-2103	3/2R	P F P	/			3	
	EPD&C-2112	3/2R	P F P	/			3	
05-6MA-2203-1	EPD&C-2171	3/1R	P NA P	/			3	
	EPD&C-2177	3/1R	P NA P	/			3	
05-6MA-2203-2	EPD&C-2138	3/3		/				

ORIGINAL PAGE IS
OF POOR QUALITY

2

IDENTIFIERS		NASA			IOA RECOMMENDATIONS *			ISSUE
NASA FMEA NUMBER	IOA ASSESSMENT NUMBER	CRIT HW/F	SCREENS A B C	CRIT HW/F	SCREENS A B C	OTHER (SEE LEGEND CODE)		
05-6MA-2203-2	EPD&C-2145	3/3		/				
	EPD&C-2172	3/3		/				
	EPD&C-2178	3/3		/				
05-6MA-2204-1	EPD&C-2174	3/1R	P NA P	/			3	
	EPD&C-2180	3/1R	P NA P	/			3	
05-6MA-2204-2	EPD&C-2141	3/3		/				
	EPD&C-2148	3/3		/				
	EPD&C-2175	3/3		/				
	EPD&C-2181	3/3		/				
05-6MA-2205-1	EPD&C-2121	2/1R	P P P	/				
05-6MA-2205-2	EPD&C-2122	3/1R	P NA P	/			3	
05-6MA-2206-1	EPD&C-2024	3/1R	P NA P	/			3	
05-6MA-2206-2	EPD&C-2025	3/1R	P NA P	/			3	
05-6MA-2207-1	EPD&C-2032	3/1R	P NA P	/			3	
05-6MA-2207-2	EPD&C-2033	3/1R	P F P	/			3	
05-6MA-2208-1	EPD&C-2127	3/3		/				
05-6MA-2208-2	EPD&C-2127A	3/3		/				
05-6MA-2209-1	EPD&C-2125	3/3		/				
05-6MA-2209-2	EPD&C-2126	3/3		/				
05-6MA-2217-1	EPD&C-2128	3/3		/			3	
05-6MA-2217-2	EPD&C-2129	3/3		/				
05-6MA-2221-1	EPD&C-2140	3/3		/			3	
	EPD&C-2147	3/3		/			3	
	EPD&C-2154	3/3		2/1R	P NA P		3	
	EPD&C-2186	3/3		/			3	
05-6MA-2221-2	EPD&C-2155	3/3		/			3	
	EPD&C-2197	3/3		/				
05-6MA-2222-1	EPD&C-2137	3/3		/			3	
	EPD&C-2144	3/3		/			3	
	EPD&C-2150	3/3		/			3	
	EPD&C-2183	3/3		/			3	
05-6MA-2222-2	EPD&C-2181	3/3		/				
	EPD&C-2184	3/3		/				
05-6MA-2228-1	EPD&C-2197	3/1R	P NA P	/			3	
05-6MA-2228-2	EPD&C-2188	3/3		/			3	
05-6MA-2229-1	EPD&C-2194	3/3		/			3	
05-6MA-2229-2	EPD&C-2195	3/3		/			3	
05-6MA-2230-1	EPD&C-2189	3/1R	P P P	/			3	
	EPD&C-2191	3/1R	P P P	/			3	
05-6MA-2230-2	EPD&C-2190	3/3		/				
	EPD&C-2192	3/3		/				
05-6MA-2251-1	EPD&C-2116	3/2R	P NA P	/			3	
05-6MA-2251-2	EPD&C-2117	3/3		/			3	
05-6MA-2252-1	EPD&C-2022	3/1R	P NA P	/			3	
05-6MA-2252-2	EPD&C-2023	3/3		/			3	
05-6MA-2253-1	EPD&C-2026	3/1R	P NA P	/			3	
	EPD&C-2028	3/1R	P NA P	/			3	
	EPD&C-2030	3/1R	P NA P	/			3	
05-6MA-2253-2	EPD&C-2027	3/3		/				
	EPD&C-2029	3/3		/				

ORIGINAL PAGE IS
OF POOR QUALITY

IDENTIFIERS		NASA			IDA RECOMMENDATIONS *				ISSUE
NASA FMEA NUMBER	IDA ASSESSMENT NUMBER	CRIT HW/F	SCREENS A B C	CRIT HW/F	SCREENS A B C	OTHER (SEE LEGEND CODE)			
05-6MA-2253-2	EPD&C-2031	3/3		/					
05-6MA-2254-1	EPD&C-2123	2/1R	P P P	/					
05-6MA-2254-2	EPD&C-2124	3/3		/					
05-6MA-2256-1	EPD&C-2075	3/1R	P NA P	/			3		
05-6MA-2256-2	EPD&C-2076	3/3		/					
05-6MA-2259-1	EPD&C-2081	3/1R	P NA P	/			3		
05-6MA-2259-2	EPD&C-2082	3/3		/					
05-6MA-2270-1	EPD&C-2160	3/1R	P NA P	/			3		
05-6MA-2270-2	EPD&C-2161	3/3		/					
05-6MA-2271-1	EPD&C-2166	3/3		/					
05-6MA-2271-2	EPD&C-2167	3/3		/					
05-6MA-2272-1	EPD&C-2164	3/3		/			3		
05-6MA-2272-2	EPD&C-2165	3/3		/					
05-6MA-2273-1	EPD&C-2164A	3/1R	P NA P	/					
05-6MA-2273-2	EPD&C-2165A	3/3		/					
05-6MA-2301-1	EPD&C-2047	3/3		/					
05-6MA-2301-2	EPD&C-2048	3/3		/					
05-6MA-2301-3	EPD&C-2049	3/3		/					
05-6MA-2302-1	EPD&C-2050	3/1R	P P P	/			3		
05-6MA-2302-2	EPD&C-2051	3/1R	P P P	/			3		
05-6MA-2302-3	EPD&C-2052	/		/			4		
05-6MA-2303-1	EPD&C-2041	3/1R	P P P	/			3		
05-6MA-2303-2	EPD&C-2042	3/1R	P P P	/			3		
05-6MA-2304-1	EPD&C-2044	3/3		/					
05-6MA-2304-2	EPD&C-2045	3/3		/					
05-6MA-2307-1	EPD&C-2289X	3/3		/			3		
05-6MA-2307-2	EPD&C-2290X	3/1R	P NA P	/					
05-6MA-2308-1	EPD&C-2291X	3/3		/			3		
05-6MA-2308-2	EPD&C-2292X	3/1R	P NA P	/					
05-6MA-2309-1	EPD&C-2293X	3/1R	P NA P	/					
05-6MA-2310-1	EPD&C-2294X	3/3		/					
05-6MA-2310-2	EPD&C-2295X	3/3		/			3		
05-6MA-2310-3	EPD&C-2296X	3/1R	P NA P	/					
05-6MA-2311-1	EPD&C-2297X	3/1R	P NA P	/					
05-6MA-2311-2	EPD&C-2298X	3/1R	P NA P	/					
05-6MA-2311-3	EPD&C-2299X	3/1R	P NA P	/					
05-6MA-2311-4	EPD&C-2300X	3/3		/			3		
05-6MA-2311-5	EPD&C-2301X	3/3		/			3		
05-6MA-2311-6	EPD&C-2302X	3/1R	P NA P	/					
05-6MA-2401-1	EPD&C-2196	3/1R	P NA P	/			3		
05-6MB-201400-1	EPD&C-2364X	3/3		/					
05-6MB-201500-1	EPD&C-2365X	3/3		/					
05-6MB-201600-1	EPD&C-2366X	2/2	P P P	/					
	EPD&C-2367X	3/1R	P P P	/					
05-6MB-2026-1	EPD&C-2321	2/1R	P P P	/					
05-6MB-2026-2	EPD&C-2310X	2/1R	P P P	/					
05-6MB-2026-3	EPD&C-2322	2/1R	P P P	/			3		
	EPD&C-2311X	2/1R	P P P	/					
05-6MB-2027-1	EPD&C-2325	3/1R	P NA P	/			3		
05-6MB-2027-2	EPD&C-2324	2/1R	P P P	/			3		

ORIGINAL PAGE IS
OF POOR QUALITY

IDENTIFIERS		NASA			IGA RECOMMENDATIONS			OTHER	ISSUE
NASA FMEA NUMBER	IGA ASSESSMENT NUMBER	CRIT HW/F	SCREENS A B C	CRIT HW/F	SCREENS A B C	(SEE LEGEND CODE)			
05-6MB-2027-2	EPD&C-2226	2/1R	P P P	/				3	
	EPD&C-2312X	2/1R	P P P	/				3	
05-6MB-2027-3	EPD&C-2313X	3/1R	P F P	/				3	
05-6MB-2028-1	EPD&C-2227	2/1R	P P P	/				3	
05-6MB-2028-2	EPD&C-2314X	2/1R	P P P	/				3	
05-6MB-2029-1	EPD&C-2229	3/1R	P P P	/				3	
05-6MB-2029-2	EPD&C-2230	2/1R	P P P	/				3	
	EPD&C-2232	2/1R	P P P	/				3	
	EPD&C-2316X	2/1R	P P P	/					
05-6MB-2029-3	EPD&C-2317X	3/1R	P P P	/				3	
05-6MB-2031-1	EPD&C-2261A	2/1R	P NA P	/				3	
	EPD&C-2261B	2/1R	P NA P	/				3	
	EPD&C-2263A	2/1R	P NA P	/				3	
	EPD&C-2263B	2/1R	P NA P	/				3	
05-6MB-2031-2	EPD&C-2263C	2/1R	P NA P	/				3	
05-6MB-2031-3	EPD&C-2262	2/1R	P P P	/				3	
	EPD&C-2263	2/1R	P NA P	/				3	
	EPD&C-2264	2/1R	P P P	/				3	
05-6MB-2043-1	EPD&C-2269	/		/					
	EPD&C-2271	3/3		/					
	EPD&C-2272	3/3		/					
05-6MB-2044-2	EPD&C-2254	2/1R	P P P	/				3	
05-6MB-2045-1	EPD&C-2255	3/3		/					
05-6MB-2045-3	EPD&C-2253A	2/1R	P NA P	/				3	
05-6MB-2046-2	EPD&C-2256	3/1R	P NA P	/				3	
05-6MB-2047-1	EPD&C-2257	3/3		/					
05-6MB-2048-2	EPD&C-2258	3/1R	P NA P	/				3	
05-6MB-2049-1	EPD&C-2259	3/1R	P NA P	/				3	
	EPD&C-2273	3/1R	P NA P	/					
05-6MB-2050-2	EPD&C-2260	3/1R	P P P	/					
05-6MB-2051-1	EPD&C-2261	2/1R	P NA P	/				3	
05-6MB-2052-2	EPD&C-2274	3/1R	P P P	/				3	
05-6MB-2066-1	EPD&C-2275	3/1R	P NA P	/				3	
05-6MB-2076-1	EPD&C-2233	2/1R	P F P	/				3	
05-6MB-2077-1	EPD&C-2263	2/1R	P NA P	/				3	
	EPD&C-2265	2/1R	P NA P	/				3	
05-6MB-2080-2	EPD&C-2276	3/1R	P F P	/				3	
05-6MB-2176-1	EPD&C-2235	2/1R	P P P	/					
05-6MB-2176-2	EPD&C-2234	3/1R	P F P	/				3	
05-6MB-2177-1	EPD&C-2237	3/1R	P P P	/					
05-6MB-2177-2	EPD&C-2235	3/1R	P F P	/				3	
05-6MB-2201-1	EPD&C-2239	3/3		/				3	
05-6MB-2201-2	EPD&C-2240	3/1R	P F P	/				3	
05-6MB-2202-1	EPD&C-2241	2/1R	P NA P	/				3	
05-6MB-2202-2	EPD&C-2242	3/1R	P F P	/				3	
05-6MB-2203-1	EPD&C-2247	3/1R	P P P	/					
05-6MB-2203-2	EPD&C-2248	3/1R	P F P	/				3	
05-6MB-2204-1	EPD&C-2249	3/1R	P P P	/					
05-6MB-2204-2	EPD&C-2250	3/1R	P P P	/					
05-6MB-2251-1	EPD&C-2243	2/1R	P NA P	/				3	

ORIGINAL PAGE IS
OF POOR QUALITY

IDENTIFIERS		NASA			IOA RECOMMENDATIONS			OTHER (SEE LEGEND CODE)	ISSUE
NASA FMEA NUMBER	IOA ASSESSMENT NUMBER	CRIT HW/F	SCREENS A B C	CRIT HW/F	SCREENS A B C				
05-6MB-2251-2	EPD&C-2244	3/3		/					
05-6MB-2252-1	EPD&C-2350X	3/3		/					
05-6MB-2252-2	EPD&C-2268	3/1R	P F P	/			3		
	EPD&C-2270	3/1R	P F P	/					
	EPD&C-2351X	3/1R	P F P	/					
05-6MB-2253-1	EPD&C-2352X	2/1R	P P P	/					
05-6MB-2253-2	EPD&C-2353X	3/3		/					
05-6MB-2254-1	EPD&C-2354X	3/3		/					
05-6MB-2254-2	EPD&C-2355X	3/1R	F F P	/					
05-6MB-2255-1	EPD&C-2356X	3/1R	P NA P	/					
05-6MB-2255-2	EPD&C-2357X	3/1R	P F P	/					
05-6MB-2256-1	EPD&C-2358X	3/3		/					
05-6MB-2256-2	EPD&C-2359X	3/1R	F F P	/					
05-6MB-2257-1	EPD&C-2360X	3/3		/					
05-6MB-2257-2	EPD&C-2361X	3/2R	F F P	/					
05-6MB-2258-1	EPD&C-2362X	3/1R	P NA P	/					
05-6MB-2258-2	EPD&C-2363X	3/1R	P F P	/					
05-6MB-2260-2	EPD&C-2246	3/1R	P P P	/			3		
05-6MB-2301-1	EPD&C-2251	3/1R	P P P	/					
05-6MB-2301-2	EPD&C-2252	3/1R	P P P	/					
NONE	EPD&C-2000	/		/			3		
	EPD&C-2001	/		/			3		
	EPD&C-2043	/		/			3		
	EPD&C-2046	/		/			3		
	EPD&C-2060	/		/			4		
	EPD&C-2205	/		/			3		
	EPD&C-2206	/		/			3		
	EPD&C-2223	/		/			3		
	EPD&C-2228	/		/			3		
	EPD&C-2231	/		/			3		
	EPD&C-2234	/		/			2		
	EPD&C-2265A	/		/					
	EPD&C-2267	/		/					
	EPD&C-2277	/		/			3		
	EPD&C-2278	/		/					
	EPD&C-2315X	/		/			3		

2

3

4

5

6

7

8

9



**MCDONNELL DOUGLAS ASTRONAUTICS COMPANY -
ENGINEERING SERVICES
16055 SPACE CENTER BLVD, HOUSTON, TEXAS 77062**