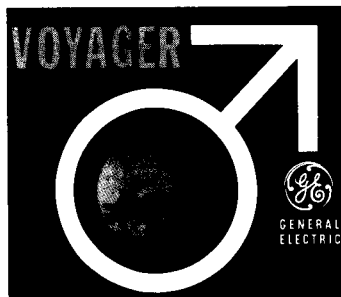
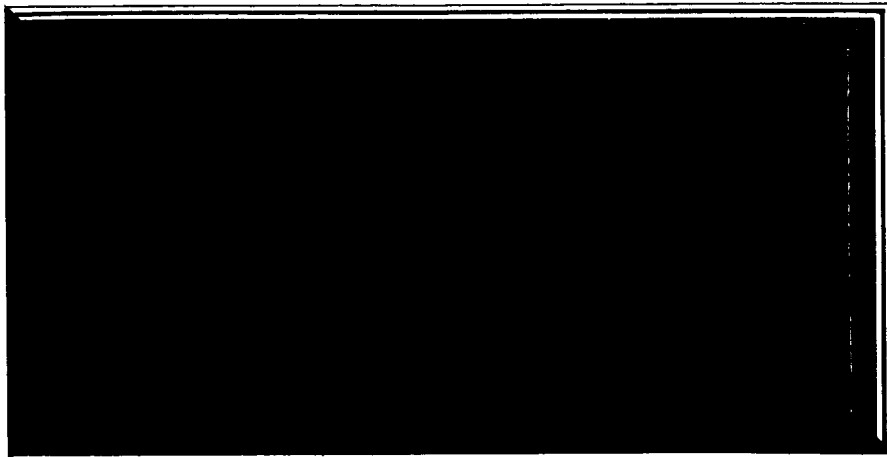


MISSILE  AND SPACE  
DIVISION



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| (PAGES)                       | (CODE)     |
| CR-89717                      | /          |
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GPO PRICE \$ \_\_\_\_\_

CFSTI PRICE(S) \$ \_\_\_\_\_

Hard copy (HC) 3.00

Microfiche (MF) 65

FINAL REPORT  
DATA MANAGEMENT STUDY  
APPENDIX M

CONTRACTOR DATA REQUIREMENTS  
SAFETY (SA)

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VOYAGER SPACECRAFT SYSTEM PROJECT

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DATA MANAGEMENT AND CONTROL TASK  
VOYAGER SPACECRAFT SYSTEM PROJECT

PREPARED FOR  
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
NASA PASADENA OFFICE  
PASADENA, CALIFORNIA

UNDER NASA CONTRACT No. NAS7-584

**GENERAL  ELECTRIC**

MISSILE AND SPACE DIVISION  
Valley Forge Space Technology Center  
P. O. Box 8555 • Philadelphia, Penna. 19101

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## INTRODUCTION

### 1.1 DEFINITION - SAFETY (SA)

These data describe the procedures, controls, methods, studies, and reporting needed to ensure the safety of Voyager operations.

### 1.2 SCOPE

The System Safety Engineering Plan describes the actions and activities required to ensure maximum protection of personnel, facilities and equipment associated with all phases of the Voyager Project from design to flight of the spacecraft.

The safety operation through the application of management and engineering resources will emphasize awareness and resolution of potential safety problems associated with the development, evaluation and reporting of safety.

| DATA ITEM NUMBER | DATA ITEM SAFETY                                 | DESCRIPTION  |
|------------------|--|--|
| SA-001           | Plan, System Safety Engineering                  | Describes System Safety Engineering criteria in applicable disciplines and the approach/m during design, development, manufacturing :  |
| SA-002           | Manual, Safety                                   | Implement general Departmental policies and procedures for handling hazardous materials; an equipment and facilities.  |
| SA-003           | Report, Safety Training Program                  | Provides Safety Training for specific hazard Voyager Project.  |
| SA-004           | Report, Systems Interfaces, Hazards and Analysis | Analysis of system and subsystems to deterri modes and subsystem interfaces to determin of the total system.   |
| SA-005           | Report, Safety Recommendations                   | Reports safety recommendations made by the records the action taken.   |
| SA-006           | Report, Accident/Incident                        | Used to assure that accidents or incidents w have a potential to do so, are thoroughly inv   |
| SA-007           | Minutes, Integrated Safety Board Meetings        | Minutes of formal meetings of the Integrated   |
| SA-008           | Report, Safety                                   | Provides a summary of components analyzed acceptability, summarizes test plans review safety requirements reviewed and approved documents the results of safety audits perfor with requirements set forth in the Safety Ma |
| SA-009           | Directive, Safety                                | Communicates urgent safety requirements to Compliance is mandatory.  |
| SA-010           | Report, Personnel Certification Program          | Reports individuals by name who are certifie i. e. , propellant handling, system test, etc.  |
| SA-011           | Report, Ordnance Accountability                  | Reports quantity and type of pyrotechnics in expended items.   |
|                  |  |  |
|                  |  |  |

\* KEY INFORMAL DATA

# DATA ITEM LIST/USER MATRIX

|   | APPLICABILITY TO FUNCTIONAL USERS<br>AT CONTRACTOR LEVEL |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|---|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
|   | SE   | PQ | MG | CM | QA | TE | RA | LS | MA | SC | PC | MF | MP | DM | FA |  |
| a, principles and techniques<br>methods which will be taken<br>and testing.   | U  | -  | U  | -  | R  | U  | R  | U  | PM | -  | U  | -  | U  | -  | U  |  |
| l instructions; specific pro-<br>d protection of personnel,   | U  | -  | U  | -  | R  | U  | U  | U  | -  | -  | U  | U  | U  | -  | U  |  |
| s associated with the   | U  | -  | U  | -  | U  | U  | U  | U  | -  | -  | U  | -  | U  | -  | U  |  |
| aine probable hazardous failure<br>e the safety problem areas   | U  | -  | U  | -  | R  | U  | R  | -  | U  | -  | U  | -  | U  | -  | -  |  |
| e customer and others and   | U  | -  | -  | -  | R  | U  | -  | -  | U  | -  | U  | -  | -  | -  | -  |  |
| ich degrade the system, or<br>stigated.   | -  | U  | U  | -  | U  | U  | U  | -  | R  | -  | U  | U  | -  | -  | -  |  |
| Safety Board  | -  | -  | U  | -  | R  | U  | -  | U  | U  | -  | U  | -  | U  | -  | -  |  |
| to ensure safety factors<br>ed for safety, provides<br>or the launch site, and<br>med to determine compliance<br>ual. | -  | -  | U  | U  | R  | U  | -  | U  | U  | -  | U  | -  | U  | -  | -  |  |
| all organizations.  | U  | -  | U  | -  | R  | U  | U  | U  | PM | -  | U  | U  | U  | -  | -  |  |
| d for specific assignments,   | U  | -  | U  | -  | R  | U  | -  | U  | U  | -  | U  | -  | U  | -  | -  |  |
| stores and accounts for all   | U  | -  | R  | -  | U  | U  | -  | R  | -  | -  | U  | U  | -  | -  | -  |  |
|   |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|   |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |

U - USE      R - REVIEW AUTHORITY      A - APPROVAL AUTHORITY      PM - PROJECT MANAGER APPROVAL

|    |    |    |    |    | APPLICABILITY AT SUBCONTRACTOR/VENDOR/SUPPLIER LEVELS |                       |                        |               |               |                  | APPLICABILITY TO PROJECT BOARDS |                          |             |               |                |                   |                 |             |                 |                   |                  |
|----|----|----|----|----|---|-----------------------|------------------------|---------------|---------------|------------------|---------------------------------|--------------------------|-------------|---------------|----------------|-------------------|-----------------|-------------|-----------------|-------------------|------------------|
| SA | AL | SI | RP | AM | PRINCIPAL SUB-CONTRACTORS                             | MAJOR SUB-CONTRACTORS | KEY SUBCON AND VENDORS | OTHER VENDORS | KEY SUPPLIERS | KEY SUBSUPPLIERS | CONFIGURATION CONTROL           | CONFIGURATION MANAGEMENT | DATA REVIEW | DESIGN REVIEW | FAILURE REVIEW | INTEGRATED SAFETY | INTEGRATED TEST | MAKE OR BUY | MATERIAL REVIEW | SOURCE EVALUATION | SOURCE SELECTION |
| R  | U  | U  | -  | -  | C   | C                     | C                      | -             | (C)           | (C)              | -                               | -                        | -           | -             | -              | R                 | U               | -           | -               | -                 | -                |
| A  | U  | U  | U  | -  | (S)   | (S)                   | (S)                    | -             | -             | -                | -                               | -                        | -           | -             | -              | R                 | U               | -           | -               | -                 | -                |
| A  | U  | -  | -  | -  | -   | -                     | -                      | -             | -             | -                | -                               | -                        | -           | -             | -              | R                 | -               | -           | -               | -                 | -                |
| A  | U  | -  | -  | -  | (C/S)   | (C/S)                 | (C/S)                  | -             | (C/S)         | (C/S)            | -                               | -                        | -           | -             | -              | R                 | U               | -           | -               | -                 | -                |
| A  | U  | U  | -  | -  | (C/S)   | (C/S)                 | (C/S)                  | -             | (C/S)         | (C/S)            | -                               | -                        | -           | -             | -              | R                 | U               | -           | -               | -                 | -                |
| A  | U  | -  | U  | -  | (S)   | (S)                   | (S)                    | -             | (S)           | (S)              | -                               | -                        | -           | -             | -              | R                 | -               | -           | -               | -                 | -                |
| A  | U  | -  | -  | -  | (C)   | (C)                   | (C)                    | (C)           | (C)           | (C)              | -                               | -                        | -           | -             | -              | R                 | U               | -           | -               | -                 | -                |
| A  | U  | -  | -  | -  | (S)   | (S)                   | (S)                    | -             | (S)           | (S)              | -                               | -                        | -           | -             | -              | R                 | U               | -           | -               | -                 | -                |
|    |    |    |    |    |   |                       |                        |               |               |                  |                                 |                          |             |               |                |                   |                 |             |                 |                   |                  |
| R  | U  | -  | -  | -  | (C)   | (C)                   | (C)                    | (C)           | (C)           | (C)              | -                               | -                        | -           | -             | -              | R                 | U               | -           | -               | -                 | -                |
| A  | U  | -  | -  | -  | (S)   | (S)                   | (S)                    | -             | (S)           | (S)              | -                               | -                        | -           | -             | -              | R                 | -               | -           | -               | -                 | -                |
| A  | U  | -  | -  | -  | -   | -                     | -                      | -             | -             | -                | -                               | -                        | -           | -             | -              | R                 | -               | -           | -               | -                 | -                |
|    |    |    |    |    |   |                       |                        |               |               |                  |                                 |                          |             |               |                |                   |                 |             |                 |                   |                  |
|    |    |    |    |    |   |                       |                        |               |               |                  |                                 |                          |             |               |                |                   |                 |             |                 |                   |                  |

C - PREPARED BY CONTRACTOR      S - PREPARED BY SUBCONTRACTOR/VENDOR/SUPPLIER      ( ) - OPTIONAL APPLICATION      NA - NOT APPLICABLE

## USER FLOW DIAGRAMS

Contractor - user flow diagrams (show the relationship between Voyager system documentation and the activities undertaken by the prime spacecraft contractor. The diagrams are intended to be a communication tool which describes the project in terms which emphasize documentation and as a planning tool for the integration of data management activities into the overall project management scheme.

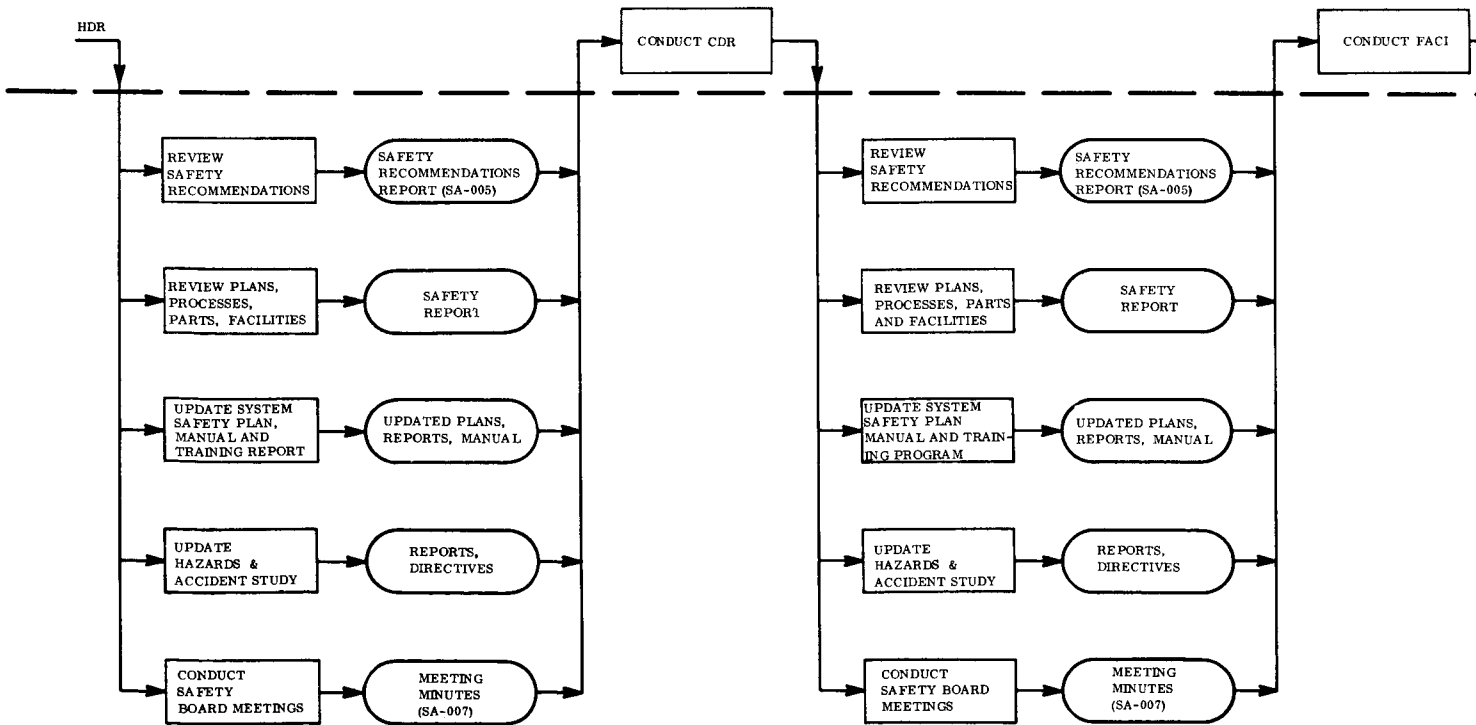
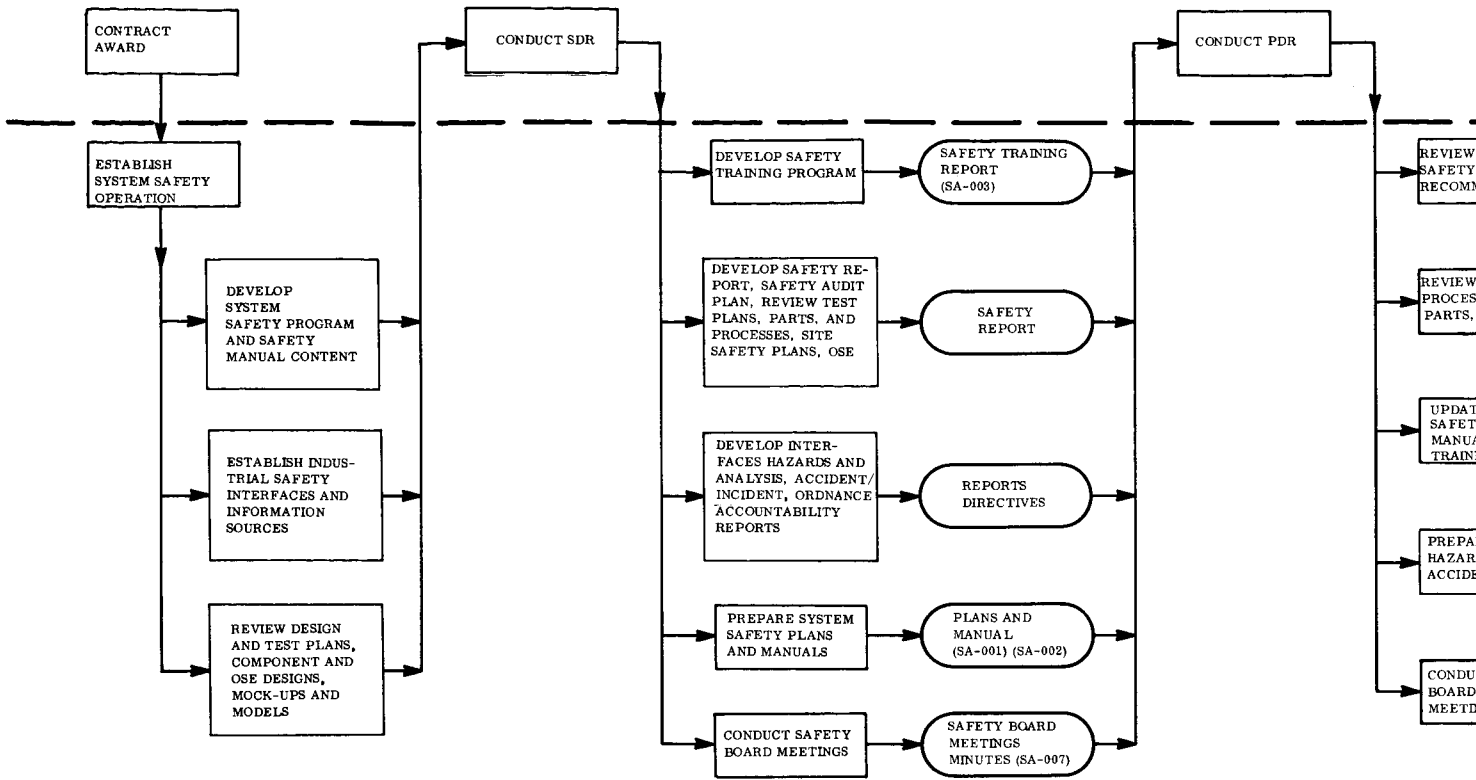
The project is considered in a generalized sense in that subsystems and components are each treated as collective entities; that is, the documentation flows associated with the several separate subsystems are not distinguished. A single representative flow is presented.

The drawings show the detail activities and are keyed to the formal design and hardware reviews. A generalized summary flow is also included.



## Safety User Flow Diagrams

| <u>Figure Number</u> | <u>Title</u>  |
|----------------------|---|
| M-1                  | Safety User Flow Diagram - Summary  |
| M-2                  | Safety User Flow Diagram - Contract Award Through<br>Critical Design Review |
| M-3                  | Safety User Flow Diagram - Critical Design Review<br>Through Launch         |



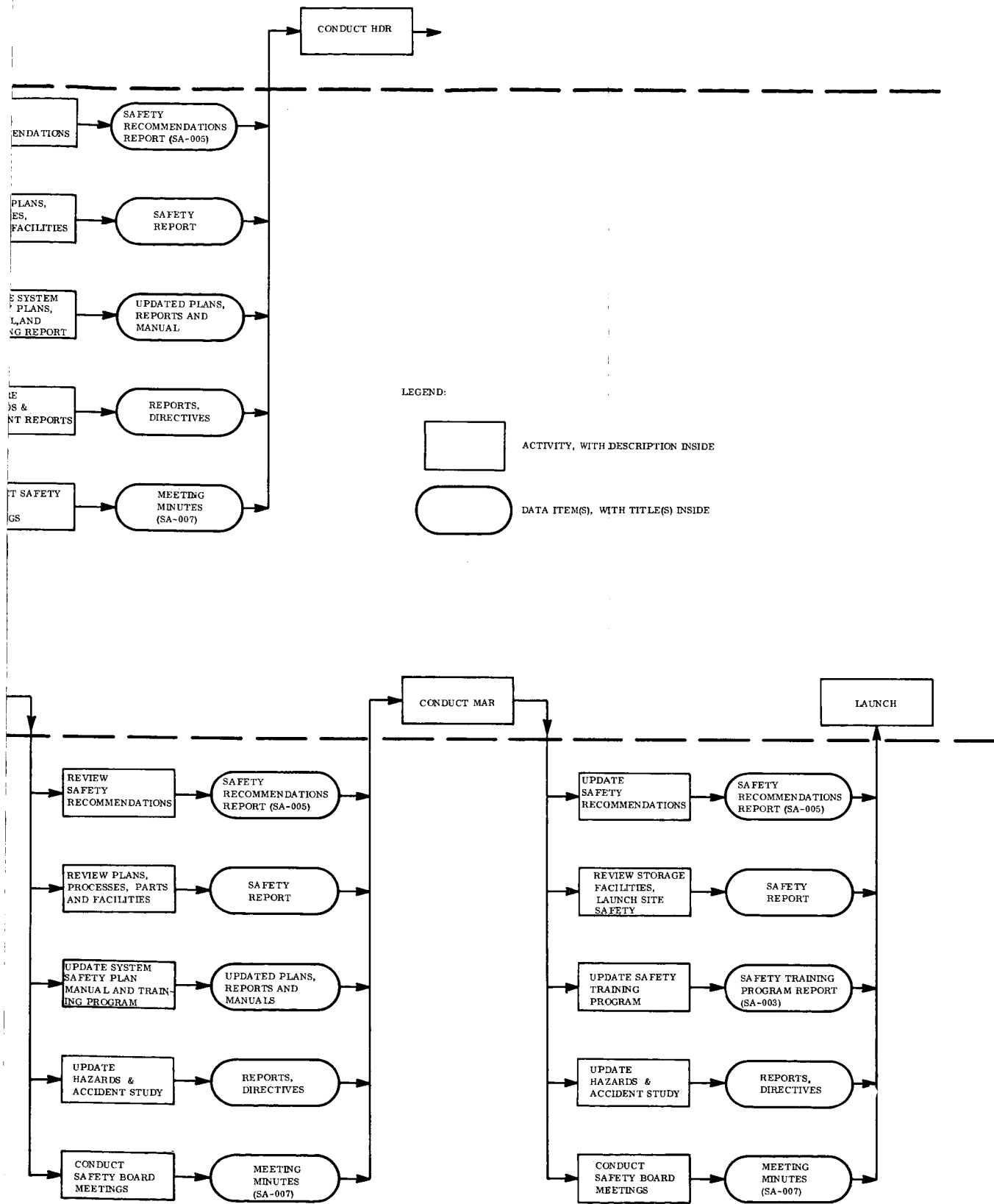
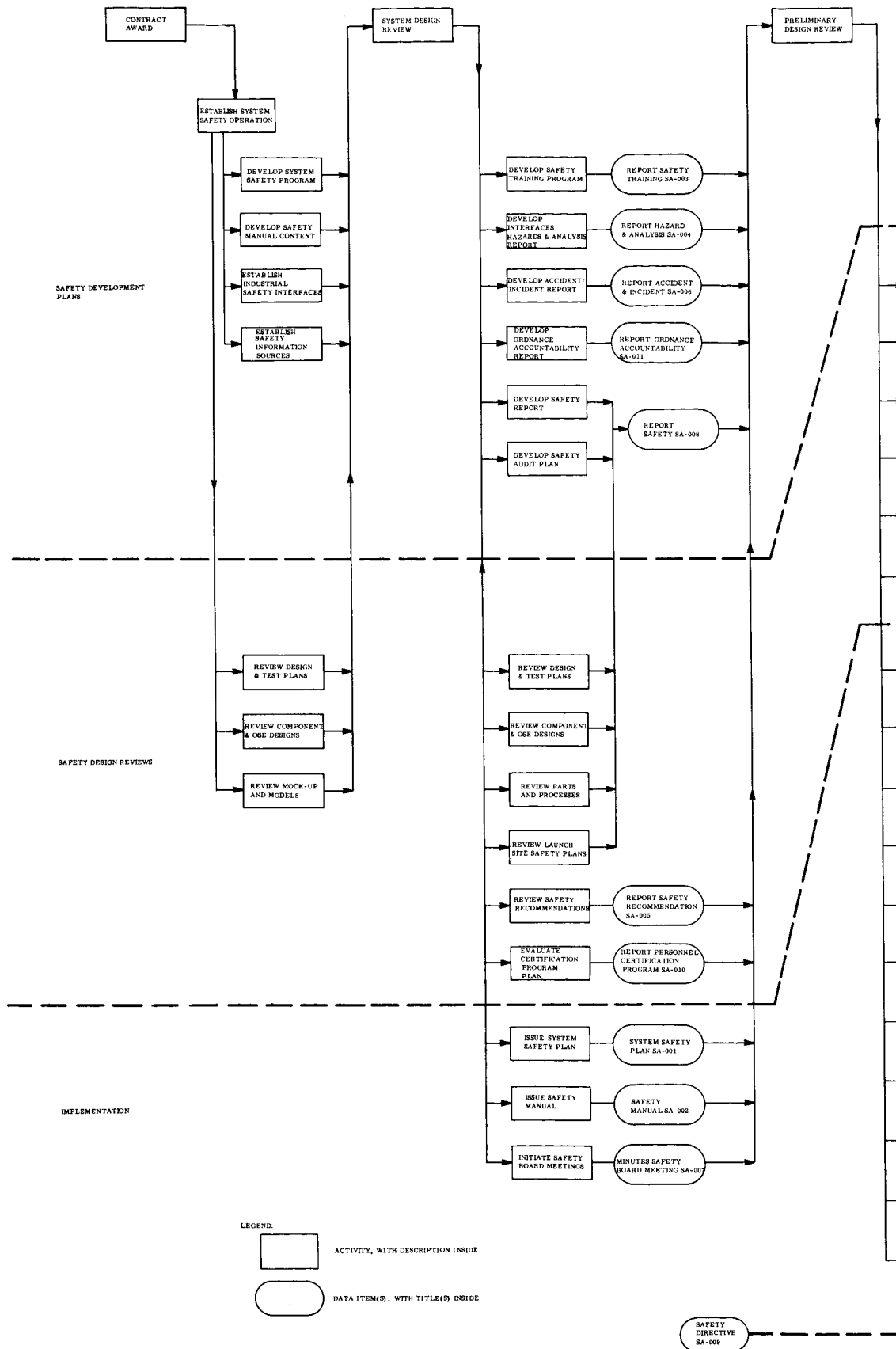


Figure M-1. Safety User Flow Diagram - Summary



3-5

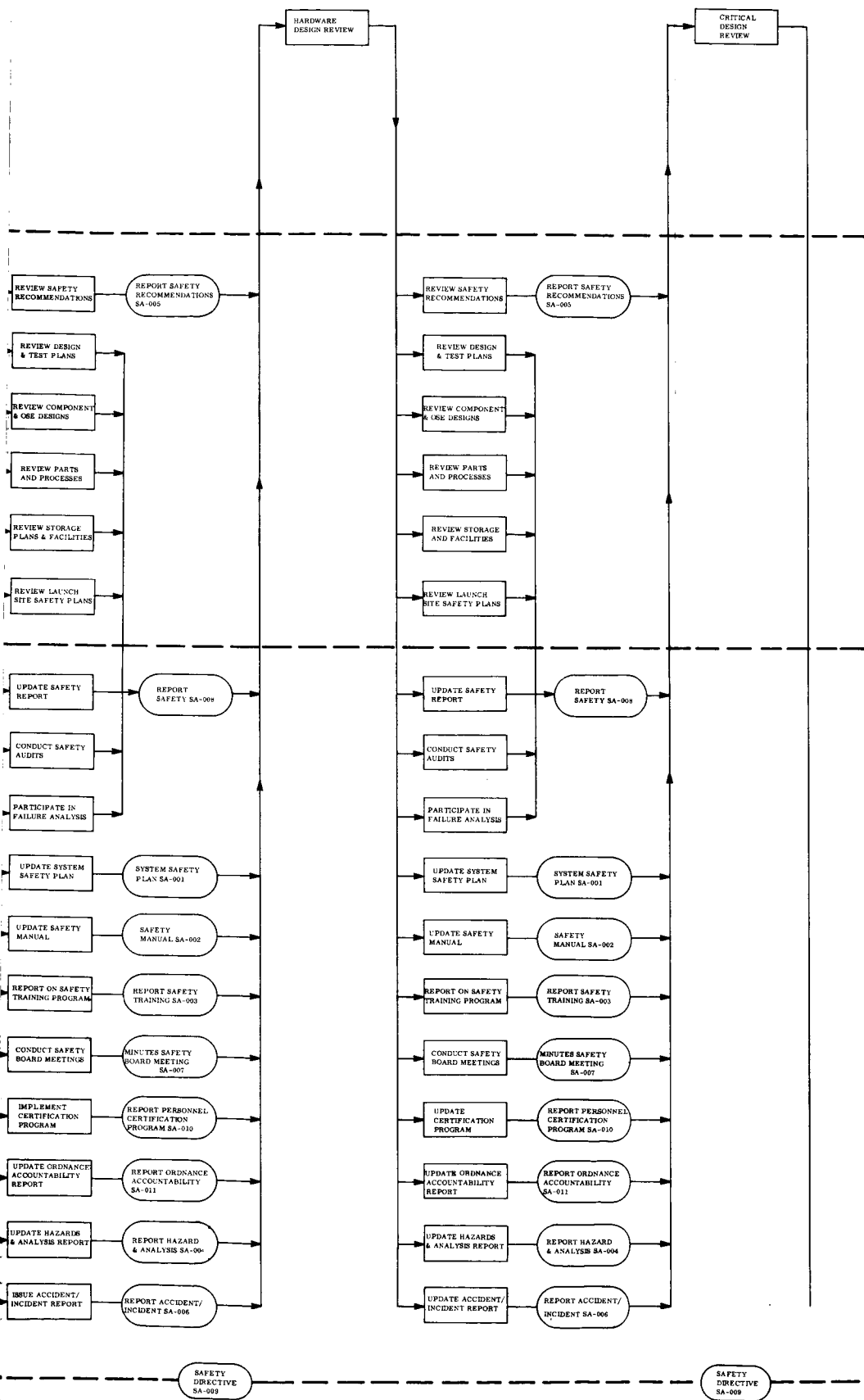
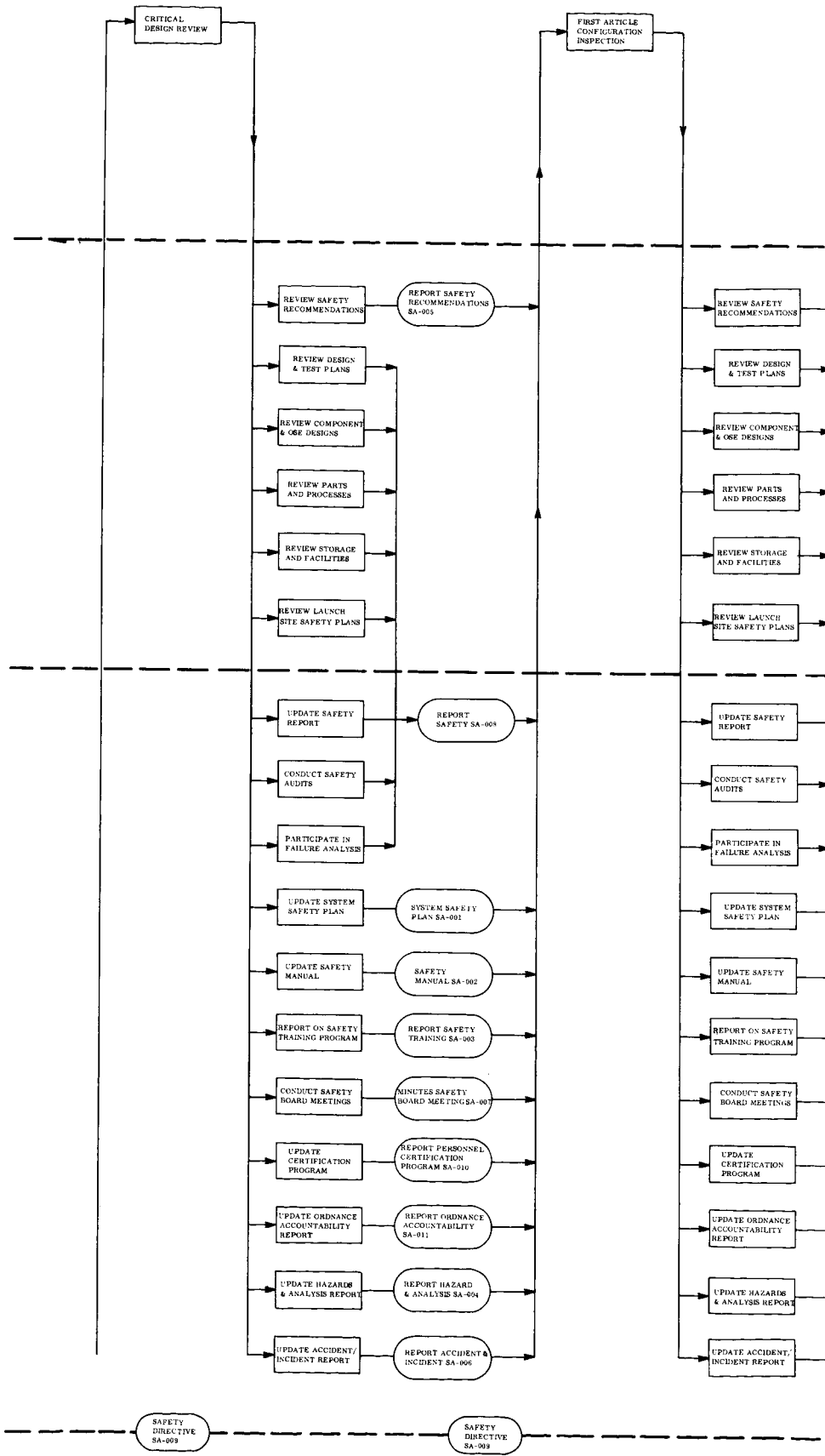


Figure M-2. Safety User Flow Diagram - Contract Award Through Critical Design Review



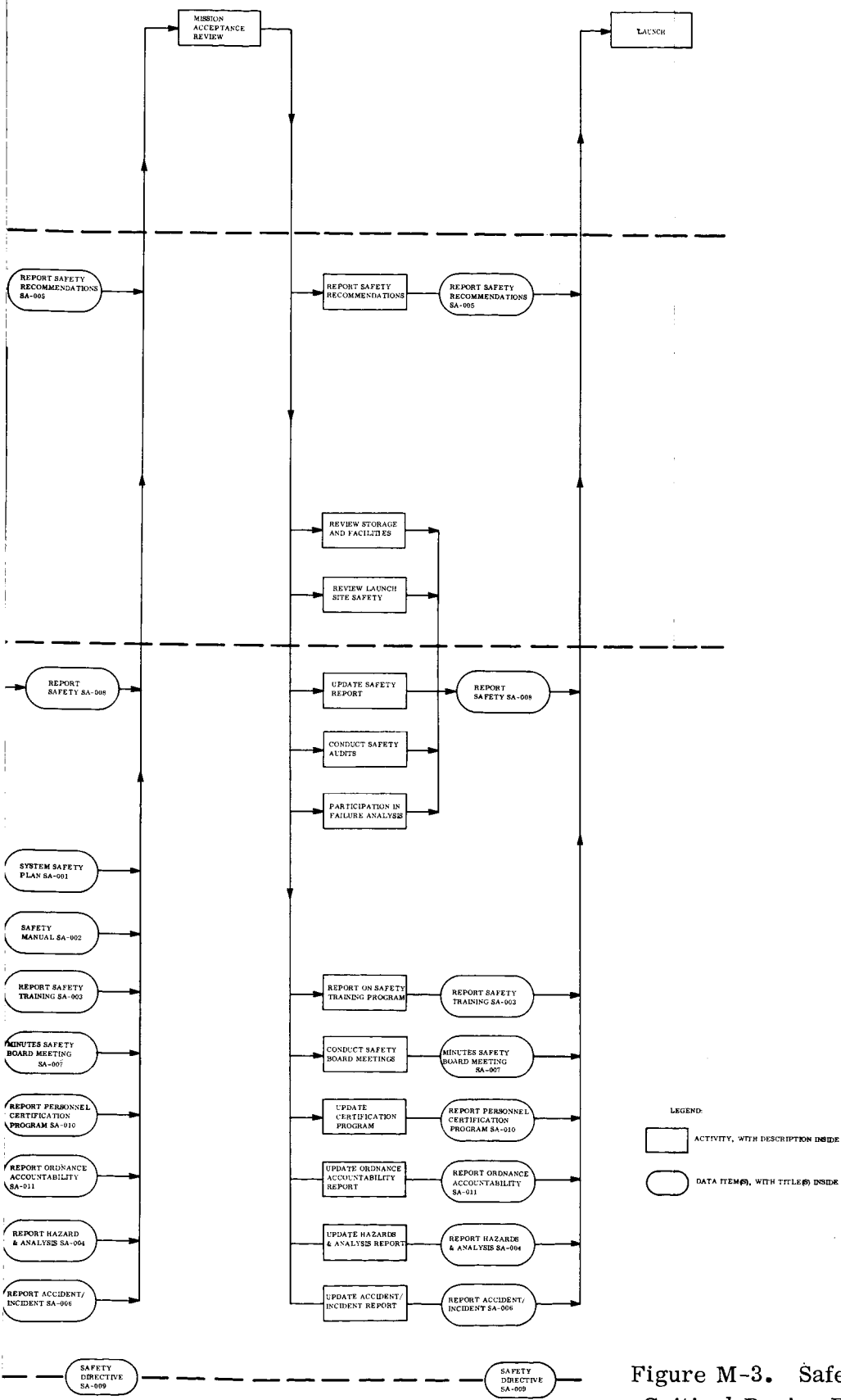


Figure M-3. Safety User Flow Diagram - Critical Design Review Through Launch



## Safety Data Requirement Descriptions

| <u>DRD<br/>Number</u> | <u>Title</u>                                     |
|-----------------------|--|
| SA-001                | Plan, System Safety Engineering                  |
| SA-002                | Manual, Safety                                   |
| SA-003                | Report, Safety Training Program                  |
| SA-004                | Report, Systems Interfaces, Hazards and Analysis |
| SA-005                | Report, Safety Recommendations                   |
| SA-006                | Report, Accident/Incident                        |
| SA-007                | Minutes, Integrated Safety Board Meetings        |
| SA-008                | Report, Safety                                   |
| SA-009                | Directive, Safety                                |
| SA-010                | Report, Personnel Certification Program          |
| SA-011                | Report, Ordnance Accountability                  |



GE EXHIBIT DRD SA-001

|   |                    |   |       |   |                         |  |                           |                       |  |
|---|--------------------|---|-------|---|-------------------------|--|---------------------------|-----------------------|--|
| VOYAGER DATA REQUIREMENT DESCRIPTION  |                    |   |       | DRD APPROVED BY:  |                         | DATE:  | DATA CATEGORY:            |                       |  |
| ORGANIZATION ORIGINATING REQUIREMENT:   | CODE:<br><b>SA</b> | OFFICE RESPONSIBLE FOR DRD:   | CODE: | DRD PREPARED BY:<br><b>F. A. Boppel</b>   | DATE:<br><b>7/28/67</b> | CONTRACT NO.:  | DRD NO.:<br><b>SA-001</b> |                       |  |
| TITLE OF DOCUMENT:<br><br><h3 style="margin: 10px 0;">PLAN, SYSTEM SAFETY ENGINEERING</h3>  |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:<br><b>Safety</b>   |                         | TASK OR SUBTASK:                                       | DRL ITEM NO.:             |                       |  |
|   |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:   |                         | DRL NO.:   | LEVEL NO.:                |                       |  |
|   |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:   |                         | DDL NO.:   | FILE NO.:                 |                       |  |
| TYPE OF DOCUMENT: <input checked="" type="checkbox"/> CONTROL <input type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input type="checkbox"/> INFORMATION   |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT STORAGE:  |                         | NO. OF COPIES:<br><b>50</b>                            |                           |                       |  |
| USE OF DOCUMENT:<br><br><b>Used to define overall safety plans and establish authority while defining responsibilities.</b>   |                    |   |       | ESTIMATED MANHOURS FOR SINGLE PREPARATION:  |                         | INFORMATION CUTOFF DATE OR MILESTONE:                  |                           |                       |  |
|   |                    |   |       | ESTIMATED COST (\$) FOR SINGLE PREPARATION:   |                         | DATE DATA DUE TO USER:                                 |                           |                       |  |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br><br><b>MA-007, Plan, Project Implementation<br/>PC-017, Plan, Subcontractor's Management<br/>MG-006, Manual, Hardware Handling</b>   |                    |   |       | FREQUENCY OF ISSUE:<br><input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input checked="" type="checkbox"/> OTHERWISE, AS SPECIFIED<br><b>One time</b> |                         | PUBLICATION DATE:<br><br><b>PDR</b>                    |                           |                       |  |
|   |                    |   |       |   |                         | UPDATE (FREQUENCY OR MILESTONE):<br><b>As required</b> |                           |                       |  |
| CLASSIFICATION:<br><input type="checkbox"/> SECRET <input type="checkbox"/> GROUP 1 <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> CONFIDENTIAL <input type="checkbox"/> GROUP 2 <input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> SECRET RESTRICTED DATA <input type="checkbox"/> GROUP 3 <input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> CONFIDENTIAL RESTRICTED DATA <input type="checkbox"/> GROUP 4 <input type="checkbox"/> PROJECT DISCREET<br><input checked="" type="checkbox"/> UNCLASSIFIED <input type="checkbox"/> PROPRIETARY <input type="checkbox"/> NOFORN<br><input type="checkbox"/> PUBLIC DOMAIN |                    |   |       |   |                         | ESTIMATED EXPIRATION DATE:                             |                           |                       |  |
| FORM OF DATA:   |                    | KIND OF DATA:   |       | REFERENCE DOCUMENTS:  |                         |  |                           |                       |  |
| <input checked="" type="checkbox"/> PRINTED DOCUMENT<br><input type="checkbox"/> CHART<br><input type="checkbox"/> DIAGRAM<br><input type="checkbox"/> DRAWING<br><input type="checkbox"/> FILM (STATIC OR MOTION)<br><input type="checkbox"/> ILLUSTRATION<br><input type="checkbox"/> MODEL<br><input type="checkbox"/> RECORDING (TAPE OR DISC)<br><input type="checkbox"/> COMPUTER CARD<br><input type="checkbox"/> COMPUTER TAPE<br><input type="checkbox"/> MICROFILM (W/OR W/O CARD)<br><input type="checkbox"/> OTHER  |                    | <input type="checkbox"/> ABSTRACT <input type="checkbox"/> INSTRUCTION<br><input type="checkbox"/> BROCHURE <input type="checkbox"/> LETTER<br><input type="checkbox"/> BULLETIN <input type="checkbox"/> LIST<br><input type="checkbox"/> CATALOG <input type="checkbox"/> LOG<br><input type="checkbox"/> CONTRACT <input type="checkbox"/> MANUAL<br><input type="checkbox"/> DIRECTIVE <input type="checkbox"/> MEMORANDUM<br><input type="checkbox"/> DISCLOSURE <input type="checkbox"/> MINUTES<br><input type="checkbox"/> ENGINEERING CHANGE ORDER <input type="checkbox"/> PROCEDURE<br><input type="checkbox"/> REQUEST FOR ENGINEERING CHANGE PROPOSAL <input type="checkbox"/> REGULATION<br><input type="checkbox"/> ENGINEERING CHANGE PROPOSAL <input type="checkbox"/> REPORT<br><input type="checkbox"/> HANDBOOK <input type="checkbox"/> SCHEDULE<br><input type="checkbox"/> INDEX <input type="checkbox"/> SPECIFICATION<br><input type="checkbox"/> <input type="checkbox"/> STANDARD<br><input type="checkbox"/> <input type="checkbox"/> VOUCHER |       |   |                         |  |                           | APPLICABLE STANDARDS: |  |
| REVIEWS AND/OR APPROVALS REQUIRED:<br>(LIST IN ORDER OF SUBMITTAL)  |                    |   |       |   |                         |  |                           |                       |  |
| SUBMIT FOR REVIEW TO:   |                    | DRAFT   |       | DATE  |                         | PREPUBLICATION PROOF                                   |                           | DATE                  |  |
| _____   |                    | _____   |       | _____   |                         | _____  |                           | _____                 |  |
| _____   |                    | BY  |       | _____   |                         | BY   |                           | _____                 |  |
| _____   |                    | _____   |       | _____   |                         | _____  |                           | _____                 |  |
| SUBMIT FOR APPROVAL TO:   |                    | BY  |       | _____   |                         | BY   |                           | _____                 |  |
| _____   |                    | _____   |       | _____   |                         | _____  |                           | _____                 |  |
| <b>Project Manager</b>  |                    | _____   |       | _____   |                         | _____  |                           | _____                 |  |

## VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

## SPECIAL INSTRUCTIONS:

DRD NO.:

SA-001

The System Safety Engineering Plan is the vehicle for defining the overall safety plan for controlling safety on the Voyager Project. This plan will be information and definition of intent for NASA, direction for operations, and a general guide document for subcontractors and launch test centers compliance.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

## OUTLINE OF CONTENTS:

The System Safety Engineering Plan presents the overall system safety plan and identifies the planned state-of-the-art engineering techniques to be implemented on the Voyager Project, to meet the safety requirements related to personnel, flight hardware, and test equipment.

Authorities and responsibilities will be documented, and enforcement plans will be presented. The safety plan objectives to be implemented during the design, development, manufacturing and testing phases of the program will be described.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)



## VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

DRD NO.:

SA-002

Safety Manual will be descriptive and detailed in content.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

The Safety Manual will describe all safety related subjects, policies, instructions, and directives, define responsibilities and authorities, and also explain safety operating procedures. It will list hazardous materials, and operations related to the Voyager vehicle, with special emphasis on those hazards that cannot be minimized under present day knowledge.

The Safety Manual will be required reading for all supervising personnel and completion of this reading will be documented by signed statement.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

|  |                    |                             |       |   |                         |  |                           |  |  |  |  |
|--|--------------------|-----------------------------|-------|---|-------------------------|--|---------------------------|--|--|--|--|
| VOYAGER DATA REQUIREMENT DESCRIPTION   |                    |                             |       | DRD APPROVED BY:  |                         | DATE:  | DATA CATEGORY:            |  |  |  |  |
| ORGANIZATION ORIGINATING REQUIREMENT:  | CODE:<br><b>SA</b> | OFFICE RESPONSIBLE FOR DRD: | CODE: | DRD PREPARED BY:<br><b>F. A. Boppel</b>   | DATE:<br><b>7/28/67</b> | CONTRACT NO.:  | DRD NO.:<br><b>SA-003</b> |  |  |  |  |
| TITLE OF DOCUMENT:<br><br><b>REPORT, SAFETY TRAINING PROGRAM</b>   |                    |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:<br><b>Safety</b>   |                         | TASK OR SUBTASK:                                       | DRL ITEM NO.:             |  |  |  |  |
|  |                    |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:   |                         | DRL NO.:   | LEVEL NO.:                |  |  |  |  |
|  |                    |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:   |                         | DDL NO.:   | FILE NO.:                 |  |  |  |  |
| TYPE OF DOCUMENT: <input checked="" type="checkbox"/> CONTROL <input type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input type="checkbox"/> INFORMATION  |                    |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE:  |                         | NO. OF COPIES:<br><b>50</b>                            |                           |  |  |  |  |
| USE OF DOCUMENT:<br><br><b>Provides information relative to safety training plans and accomplishments</b>  |                    |                             |       | ESTIMATED MANHOURS FOR SINGLE PREPARATION:  |                         | INFORMATION CUTOFF DATE OR MILESTONE:                  |                           |  |  |  |  |
|  |                    |                             |       | ESTIMATED COST (\$) FOR SINGLE PREPARATION:   |                         | DATE DATA DUE TO USER:                                 |                           |  |  |  |  |
|  |                    |                             |       | FREQUENCY OF ISSUE:<br><input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input checked="" type="checkbox"/> OTHERWISE, AS SPECIFIED<br><b>One time</b>   |                         | PUBLICATION DATE:<br><b>PDR</b>                        |                           |  |  |  |  |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br><br><b>MG-006, Manual, Certification and Training</b>   |                    |                             |       |   |                         | UPDATE (FREQUENCY OR MILESTONE):<br><b>As required</b> |                           |  |  |  |  |
|  |                    |                             |       |   |                         | ESTIMATED EXPIRATION DATE:                             |                           |  |  |  |  |
|  |                    |                             |       | CLASSIFICATION:<br><input type="checkbox"/> SECRET <input type="checkbox"/> GROUP 1 <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> CONFIDENTIAL <input type="checkbox"/> GROUP 2 <input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> SECRET RESTRICTED DATA <input type="checkbox"/> GROUP 3 <input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> CONFIDENTIAL RESTRICTED DATA <input type="checkbox"/> GROUP 4 <input type="checkbox"/> PROJECT DISCREET<br><input checked="" type="checkbox"/> UNCLASSIFIED <input type="checkbox"/> PROPRIETARY <input type="checkbox"/> NOFORN<br><input type="checkbox"/> PUBLIC DOMAIN |                         |  |                           |  |  |  |  |
| FORM OF DATA: <input checked="" type="checkbox"/> PRINTED DOCUMENT <input type="checkbox"/> CHART <input type="checkbox"/> DIAGRAM <input type="checkbox"/> DRAWING <input checked="" type="checkbox"/> FILM (STATIC OR MOTION) <input type="checkbox"/> ILLUSTRATION <input type="checkbox"/> MODEL <input type="checkbox"/> RECORDING (TAPE OR DISC) <input type="checkbox"/> COMPUTER CARD <input type="checkbox"/> COMPUTER TAPE <input type="checkbox"/> MICROFILM (W/OR W/O CARD) <input type="checkbox"/> OTHER |                    |                             |       | KIND OF DATA: <input type="checkbox"/> ABSTRACT <input type="checkbox"/> BROCHURE <input type="checkbox"/> BULLETIN <input type="checkbox"/> CATALOG <input type="checkbox"/> CONTRACT <input type="checkbox"/> DIRECTIVE <input type="checkbox"/> DISCLOSURE <input type="checkbox"/> ENGINEERING CHANGE ORDER <input type="checkbox"/> REQUEST FOR ENGINEERING CHANGE PROPOSAL <input type="checkbox"/> ENGINEERING CHANGE PROPOSAL <input type="checkbox"/> HANDBOOK <input type="checkbox"/> INDEX  |                         |  |                           | <input type="checkbox"/> INSTRUCTION<br><input type="checkbox"/> LETTER<br><input type="checkbox"/> LIST<br><input type="checkbox"/> LOG<br><input type="checkbox"/> MANUAL<br><input type="checkbox"/> MEMORANDUM<br><input type="checkbox"/> MINUTES<br><input checked="" type="checkbox"/> PLAN<br><input type="checkbox"/> PROCEDURE<br><input type="checkbox"/> REGULATION<br><input type="checkbox"/> REPORT<br><input type="checkbox"/> SCHEDULE<br><input type="checkbox"/> SPECIFICATION<br><input type="checkbox"/> STANDARD<br><input type="checkbox"/> VOUCHER |  |  |  |
| REVIEWS AND/OR APPROVALS REQUIRED:<br>(LIST IN ORDER OF SUBMITTAL)   |                    |                             |       | REFERENCE DOCUMENTS:  |                         |  |                           |  |  |  |  |
|  |                    |                             |       | APPLICABLE STANDARDS:   |                         |  |                           |  |  |  |  |
| SUBMIT FOR REVIEW TO:  |                    |                             |       | DATE  |                         |  |                           |  |  |  |  |
| _____ BY _____   |                    |                             |       | _____   |                         |  |                           |  |  |  |  |
| _____ BY _____   |                    |                             |       | _____   |                         |  |                           |  |  |  |  |
| _____ BY _____   |                    |                             |       | _____   |                         |  |                           |  |  |  |  |
| _____ BY _____   |                    |                             |       | _____   |                         |  |                           |  |  |  |  |
| SUBMIT FOR APPROVAL TO:  |                    |                             |       | DATE  |                         |  |                           |  |  |  |  |
| _____ BY _____   |                    |                             |       | _____   |                         |  |                           |  |  |  |  |
| <b>Manager, Safety</b>   |                    |                             |       | _____   |                         |  |                           |  |  |  |  |

DRD NO.:

SA-003

SPECIAL INSTRUCTIONS:

Management and supervision should use this report to maintain an awareness of required Safety Training Programs.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

Describes Safety Training Program, and plans. Subject matter will be general safety as well as specific Voyager-related safety.

This report will also report on the number of personnel and safety programs that they are certified in, i. e., propellant handling, explosive handling, systems testing, etc.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

GE EXHIBIT DRD SA-004

|   |             |                             |       |  |                  |  |                    |                      |  |
|---|-------------|-----------------------------|-------|--|------------------|--|--------------------|----------------------|--|
| VOYAGER DATA REQUIREMENT DESCRIPTION  |             |                             |       | DRD APPROVED BY:   |                  | DATE:  | DATA CATEGORY:     |                      |  |
| ORGANIZATION ORIGINATING REQUIREMENT:   | CODE:<br>SA | OFFICE RESPONSIBLE FOR DRD: | CODE: | DRD PREPARED BY:<br>F. A. Boppel   | DATE:<br>7/28/67 | CONTRACT NO.:  | DRD NO.:<br>SA-004 |                      |  |
| TITLE OF DOCUMENT:<br><br>REPORT, SYSTEMS INTERFACES, HAZARDS, AND ANALYSIS   |             |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:<br>Safety   |                  | TASK OR SUBTASK:   | DRL ITEM NO.:      |                      |  |
|   |             |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:  |                  | DRL NO.:   | LEVEL NO.:         |                      |  |
|   |             |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:  |                  | DDL NO.:   | FILE NO.:          |                      |  |
| TYPE OF DOCUMENT: <input type="checkbox"/> CONTROL <input type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input checked="" type="checkbox"/> INFORMATION   |             |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE:   |                  | NO. OF COPIES:<br>25   |                    |                      |  |
| USE OF DOCUMENT:<br>Management tool for use in communicating hazards and analysis information related to the Voyager vehicle.   |             |                             |       | ESTIMATED MANHOURS FOR SINGLE PREPARATION:   |                  | INFORMATION CUTOFF DATE OR MILESTONE:  |                    |                      |  |
|   |             |                             |       | ESTIMATED COST (\$) FOR SINGLE PREPARATION:  |                  | DATE DATA DUE TO USER:   |                    |                      |  |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br>SA-001, Plan, System Safety Engineering<br>TE-125, Procedure, Facilities Operating<br>TE-157, Plan, Facilities Certification   |             |                             |       | FREQUENCY OF ISSUE:<br><input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input checked="" type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input type="checkbox"/> OTHERWISE, AS SPECIFIED   |                  | PUBLICATION DATE:<br>PDR   |                    |                      |  |
|   |             |                             |       |  |                  | UPDATE (FREQUENCY OR MILESTONE):<br>Quarterly  |                    |                      |  |
| CLASSIFICATION:<br><input type="checkbox"/> SECRET<br><input type="checkbox"/> CONFIDENTIAL<br><input type="checkbox"/> SECRET RESTRICTED DATA<br><input type="checkbox"/> CONFIDENTIAL RESTRICTED DATA<br><input checked="" type="checkbox"/> UNCLASSIFIED   |             |                             |       | <input type="checkbox"/> GROUP 1<br><input type="checkbox"/> GROUP 2<br><input type="checkbox"/> GROUP 3<br><input type="checkbox"/> GROUP 4<br><input type="checkbox"/> PROPRIETARY<br><input type="checkbox"/> PUBLIC DOMAIN   |                  | <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> PROJECT DISCREET<br><input type="checkbox"/> NOFORN |                    |                      |  |
| FORM OF DATA:<br><input checked="" type="checkbox"/> PRINTED DOCUMENT<br><input type="checkbox"/> CHART<br><input type="checkbox"/> DIAGRAM<br><input type="checkbox"/> DRAWING<br><input type="checkbox"/> FILM (STATIC OR MOTION)<br><input type="checkbox"/> ILLUSTRATION<br><input type="checkbox"/> MODEL<br><input type="checkbox"/> RECORDING (TAPE OR DISC)<br><input type="checkbox"/> COMPUTER CARD<br><input type="checkbox"/> COMPUTER TAPE<br><input type="checkbox"/> MICROFILM (W/OR W/O CARD)<br><input type="checkbox"/> OTHER |             |                             |       | KIND OF DATA:<br><input type="checkbox"/> ABSTRACT<br><input type="checkbox"/> BROCHURE<br><input type="checkbox"/> BULLETIN<br><input type="checkbox"/> CATALOG<br><input type="checkbox"/> CONTRACT<br><input type="checkbox"/> DIRECTIVE<br><input type="checkbox"/> DISCLOSURE<br><input type="checkbox"/> ENGINEERING CHANGE ORDER<br><input type="checkbox"/> REQUEST FOR ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> HANDBOOK<br><input type="checkbox"/> INDEX |                  |  |                    | REFERENCE DOCUMENTS: |  |
|   |             |                             |       | APPLICABLE STANDARDS:  |                  |  |                    |                      |  |
| REVIEWS AND/OR APPROVALS REQUIRED:<br>(LIST IN ORDER OF SUBMITTAL)  |             |                             |       |  |                  |  |                    |                      |  |
|   |             | DRAFT                       |       | DATE   |                  | PREPUBLICATION PROOF   |                    |                      |  |
| SUBMIT FOR REVIEW TO:   |             | BY                          |       | DATE   |                  | BY   |                    |                      |  |
| SUBMIT FOR APPROVAL TO:   |             | BY                          |       | DATE   |                  | BY   |                    |                      |  |
|   |             | Manager, Safety             |       |  |                  |  |                    |                      |  |

## VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

## SPECIAL INSTRUCTIONS:

DRD NO.:

SA-004

This report should be considered as required reading for all management and supervisory personnel on the Voyager Project.

## SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

## OUTLINE OF CONTENTS:

Describes subsystems, systems analysis performed to identify hazards and failure modes; it will also identify interface hazards which require subcontractor awareness, or those hazards identified by subcontractors for our attention.

This report will be a compilation of all the known hazards resulting from design interface and/or testing in critical areas. This report will be used to report these conditions in a summary format for ready reference through all management responsible areas.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD)



**GE EXHIBIT DRD SA-005**

|  |                    |  |       |   |                         |  |                           |
|--|--------------------|--|-------|---|-------------------------|--|---------------------------|
| VOYAGER DATA REQUIREMENT DESCRIPTION   |                    |  |       | DRD APPROVED BY:  |                         | DATE:  | DATA CATEGORY:            |
| ORGANIZATION ORIGINATING REQUIREMENT:  | CODE:<br><b>SA</b> | OFFICE RESPONSIBLE FOR DRD:  | CODE: | DRD PREPARED BY:<br><b>F. A. Boppel</b>   | DATE:<br><b>7/28/67</b> | CONTRACT NO.:  | DRD NO.:<br><b>SA-005</b> |
| TITLE OF DOCUMENT:<br><br><b>REPORT, SAFETY RECOMMENDATIONS</b>  |                    |  |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:<br><b>Safety</b>   |                         | TASK OR SUBTASK:                                     | DRL ITEM NO.:             |
|  |                    |  |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:   |                         | DRL NO.:   | LEVEL NO.:                |
|  |                    |  |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:   |                         | DDL NO.:   | FILE NO.:                 |
| TYPE OF DOCUMENT: <input type="checkbox"/> CONTROL <input type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input checked="" type="checkbox"/> INFORMATION  |                    |  |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE:  |                         | NO. OF COPIES:<br><b>25</b>                          |                           |
| USE OF DOCUMENT:<br><br><b>Maintain supervisor hazard awareness at a high level.</b>   |                    |  |       | ESTIMATED MANHOURS FOR SINGLE PREPARATION:  |                         | INFORMATION CUTOFF DATE OR MILESTONE:                |                           |
|  |                    |  |       | ESTIMATED COST (\$) FOR SINGLE PREPARATION:   |                         | DATE DATA DUE TO USER:                               |                           |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br><br><b>SA-001, Plan, System Safety Engineering</b>  |                    |  |       | FREQUENCY OF ISSUE:   |                         | PUBLICATION DATE:                                    |                           |
|  |                    |  |       | <input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input checked="" type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input type="checkbox"/> OTHERWISE, AS SPECIFIED                 |                         | <b>PDR</b>   |                           |
|  |                    |  |       |   |                         | UPDATE (FREQUENCY OR MILESTONE):<br><b>Quarterly</b> |                           |
| CLASSIFICATION:  |                    |  |       | <input type="checkbox"/> GROUP 1 <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> GROUP 2 <input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> GROUP 3 <input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> GROUP 4 <input type="checkbox"/> PROJECT DISCREET<br><input type="checkbox"/> PROPRIETARY <input type="checkbox"/> NOFORN<br><input type="checkbox"/> PUBLIC DOMAIN |                         | ESTIMATED EXPIRATION DATE:                           |                           |
| FORM OF DATA:  |                    | KIND OF DATA:  |       | REFERENCE DOCUMENTS:  |                         |  |                           |
| <input checked="" type="checkbox"/> PRINTED DOCUMENT<br><input type="checkbox"/> CHART<br><input type="checkbox"/> DIAGRAM<br><input type="checkbox"/> DRAWING<br><input type="checkbox"/> FILM (STATIC OR MOTION)<br><input type="checkbox"/> ILLUSTRATION<br><input type="checkbox"/> MODEL<br><input type="checkbox"/> RECORDING (TAPE OR DISC)<br><input type="checkbox"/> COMPUTER CARD<br><input type="checkbox"/> COMPUTER TAPE<br><input type="checkbox"/> MICROFILM (W/OR W/O CARD)<br><input type="checkbox"/> OTHER |                    | <input type="checkbox"/> ABSTRACT <input type="checkbox"/> INSTRUCTION<br><input type="checkbox"/> BROCHURE <input type="checkbox"/> LETTER<br><input type="checkbox"/> BULLETIN <input type="checkbox"/> LIST<br><input type="checkbox"/> CATALOG <input type="checkbox"/> LOG<br><input type="checkbox"/> CONTRACT <input type="checkbox"/> MANUAL<br><input type="checkbox"/> DIRECTIVE <input type="checkbox"/> MEMORANDUM<br><input type="checkbox"/> DISCLOSURE <input type="checkbox"/> MINUTES<br><input type="checkbox"/> ENGINEERING CHANGE ORDER <input type="checkbox"/> PLAN<br><input type="checkbox"/> REQUEST FOR ENGINEERING CHANGE PROPOSAL <input type="checkbox"/> PROCEDURE<br><input type="checkbox"/> ENGINEERING CHANGE PROPOSAL <input type="checkbox"/> REGULATION<br><input type="checkbox"/> HANDBOOK <input type="checkbox"/> SCHEDULE<br><input type="checkbox"/> INDEX <input type="checkbox"/> SPECIFICATION<br><input type="checkbox"/> VOUCHER |       | APPLICABLE STANDARDS:   |                         |  |                           |
| REVIEWS AND/OR APPROVALS REQUIRED:<br>(LIST IN ORDER OF SUBMITTAL)   |                    |  |       |   |                         |  |                           |
|  |                    | DRAFT  | DATE  | PREPUBLICATION PROOF  | DATE                    |  |                           |
| SUBMIT FOR REVIEW TO:  |                    | _____  | _____ | _____   | _____                   |  |                           |
|  |                    | _____  | _____ | _____   | _____                   |  |                           |
|  |                    | _____  | _____ | _____   | _____                   |  |                           |
|  |                    | _____  | _____ | _____   | _____                   |  |                           |
| SUBMIT FOR APPROVAL TO:  |                    | _____  | _____ | _____   | _____                   |  |                           |
|  |                    | _____  | _____ | _____   | _____                   |  |                           |
|  |                    | <b>Manager, Safety</b>   | _____ | _____   | _____                   |  |                           |

SPECIAL INSTRUCTIONS:

DRD NO.:  
SA-005

Voyager supervisor will review and comment on recommendations made by the customer.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

Report, Safety Recommendation

1. Introduction and scope
2. Summary of recommendations
3. Responsible operations review list
4. Action due dates assignments
5. Summary of company answer

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

GE EXHIBIT DRD SA-006

|  |       |   |       |   |                                       |  |  |
|--|-------|---|-------|---|---------------------------------------|--|--|
| VOYAGER DATA REQUIREMENT DESCRIPTION   |       |   |       | DRD APPROVED BY:  | DATE:                                 | DATA CATEGORY:   |  |
| ORGANIZATION ORIGINATING REQUIREMENT:  | CODE: | OFFICE RESPONSIBLE FOR DRD:   | CODE: | DRD PREPARED BY:  | DATE:                                 | CONTRACT NO.:  | DRD NO.:   |
|  | SA    |   |       | F. A. Boppel  | 7/28/67                               |  | SA-006   |
| TITLE OF DOCUMENT:<br><br>REPORT, ACCIDENT/INCIDENT  |       |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:  | TASK OR SUBTASK:                      | DRL ITEM NO.:  |  |
|  |       |   |       | Safety  |                                       |  |  |
|  |       |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:   | DRL NO.:                              | LEVEL NO.:   |  |
| TYPE OF DOCUMENT: <input type="checkbox"/> CONTROL <input type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input checked="" type="checkbox"/> INFORMATION  |       |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:   | DDL NO.:                              | FILE NO.:  |  |
|  |       |   |       |   |                                       |  |  |
| USE OF DOCUMENT:<br><br>Used to identify to management all accidents and incidents related to safety.  |       |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE:  | NO. OF COPIES:                        |  |  |
|  |       |   |       |   |                                       | 50   |  |
|  |       |   |       | ESTIMATED MANHOURS FOR SINGLE PREPARATION:  | INFORMATION CUTOFF DATE OR MILESTONE: |  |  |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br>SA-001, Plan, System Safety Engineering<br>SA-005, Report, Safety<br>QA-020, Report, Failure Analysis   |       |   |       | ESTIMATED COST (\$) FOR SINGLE PREPARATION:   | DATE DATA DUE TO USER:                |  |  |
|  |       |   |       |   |                                       |  |  |
|  |       |   |       | FREQUENCY OF ISSUE:   | PUBLICATION DATE:                     |  |  |
| CLASSIFICATION:<br><input type="checkbox"/> SECRET<br><input type="checkbox"/> CONFIDENTIAL<br><input type="checkbox"/> SECRET RESTRICTED DATA<br><input type="checkbox"/> CONFIDENTIAL RESTRICTED DATA<br><input checked="" type="checkbox"/> UNCLASSIFIED  |       |   |       | <input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input checked="" type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input type="checkbox"/> OTHERWISE, AS SPECIFIED |                                       | <input type="checkbox"/> GROUP 1<br><input type="checkbox"/> GROUP 2<br><input type="checkbox"/> GROUP 3<br><input type="checkbox"/> GROUP 4<br><input type="checkbox"/> PROPRIETARY<br><input type="checkbox"/> PUBLIC DOMAIN | <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> PROJECT DISCREET<br><input type="checkbox"/> NOFORN   |
|  |       |   |       |   |                                       | <input type="checkbox"/> AS REQUIRED<br>ESTIMATED EXPIRATION DATE:   |  |
|  |       |   |       |   |                                       |  |  |
| FORM OF DATA:  |       | KIND OF DATA:   |       | REFERENCE DOCUMENTS:<br><br>NASA Safety Specs.<br>Military Safety Specs.  |                                       |  |  |
| <input checked="" type="checkbox"/> PRINTED DOCUMENT<br><input type="checkbox"/> CHART<br><input type="checkbox"/> DIAGRAM<br><input type="checkbox"/> DRAWING<br><input type="checkbox"/> FILM (STATIC OR MOTION)<br><input type="checkbox"/> ILLUSTRATION<br><input type="checkbox"/> MODEL<br><input type="checkbox"/> RECORDING (TAPE OR DISC)<br><input type="checkbox"/> COMPUTER CARD<br><input type="checkbox"/> COMPUTER TAPE<br><input type="checkbox"/> MICROFILM (W/OR W/O CARD)<br><input type="checkbox"/> OTHER |       | <input type="checkbox"/> ABSTRACT<br><input type="checkbox"/> BROCHURE<br><input type="checkbox"/> BULLETIN<br><input type="checkbox"/> CATALOG<br><input type="checkbox"/> CONTRACT<br><input type="checkbox"/> DIRECTIVE<br><input type="checkbox"/> DISCLOSURE<br><input type="checkbox"/> ENGINEERING CHANGE ORDER<br><input type="checkbox"/> REQUEST FOR ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> HANDBOOK<br><input type="checkbox"/> INDEX |       |   |                                       |  | <input type="checkbox"/> INSTRUCTION<br><input type="checkbox"/> LETTER<br><input type="checkbox"/> LIST<br><input type="checkbox"/> LOG<br><input type="checkbox"/> MANUAL<br><input type="checkbox"/> MEMORANDUM<br><input type="checkbox"/> MINUTES<br><input type="checkbox"/> PLAN<br><input type="checkbox"/> PROCEDURE<br><input type="checkbox"/> REGULATION<br><input checked="" type="checkbox"/> REPORT<br><input type="checkbox"/> SCHEDULE<br><input type="checkbox"/> SPECIFICATION<br><input type="checkbox"/> STANDARD<br><input type="checkbox"/> VOUCHER |
| REVIEWS AND/OR APPROVALS REQUIRED:<br>(LIST IN ORDER OF SUBMITTAL)   |       |   |       | APPLICABLE STANDARDS:   |                                       |  |  |
|  |       |   |       |   |                                       |  |  |
|  |       |   |       | DRAFT   | DATE                                  | PREPUBLICATION PROOF   | DATE   |
| SUBMIT FOR REVIEW TO: _____  |       |   |       |   |                                       |  |  |
| _____ BY _____   |       |   |       |   |                                       |  |  |
| _____ BY _____   |       |   |       |   |                                       |  |  |
| SUBMIT FOR APPROVAL TO: <u>Manager, Safety</u>   |       |   |       | BY _____  | _____                                 | BY _____   | _____  |

## VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

## SPECIAL INSTRUCTIONS:

DRD NO.:

SA-006

Monthly issuance will be maintained even if no accidents or incidents have occurred.

## SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

## OUTLINE OF CONTENTS:

Used to assure communications of accidents or incidents which degrade the system, or have a potential to do so, and to report on results of related investigations.

This report will be maintained throughout the life of the Voyager Project and will be issued to launch site personnel identifying the accidents and/or incidents noted at the launch site.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

GE EXHIBIT DRD SA-007

|  |                    |   |       |  |                         |  |                           |  |  |  |  |
|--|--------------------|---|-------|--|-------------------------|--|---------------------------|--|--|--|--|
| VOYAGER DATA REQUIREMENT DESCRIPTION   |                    |   |       | DRD APPROVED BY:   |                         | DATE:  | DATA CATEGORY:            |  |  |  |  |
| ORGANIZATION ORIGINATING REQUIREMENT:  | CODE:<br><b>SA</b> | OFFICE RESPONSIBLE FOR DRD:   | CODE: | DRD PREPARED BY:<br><b>F. A. Boppel</b>  | DATE:<br><b>7/28/67</b> | CONTRACT NO.:  | DRD NO.:<br><b>SA-007</b> |  |  |  |  |
| TITLE OF DOCUMENT:<br><br><b>MINUTES, INTEGRATED SAFETY BOARD MEETINGS</b>   |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:<br><b>Safety</b>  |                         | TASK OR SUBTASK:                                       | DRD ITEM NO.:             |  |  |  |  |
|  |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:  |                         | DRL NO.:   | LEVEL NO.:                |  |  |  |  |
|  |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:  |                         | DDL NO.:   | FILE NO.:                 |  |  |  |  |
| TYPE OF DOCUMENT: <input type="checkbox"/> CONTROL <input type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input checked="" type="checkbox"/> INFORMATION  |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE:   |                         | NO. OF COPIES:<br><b>20</b>                            |                           |  |  |  |  |
| USE OF DOCUMENT:<br><br>To document subject matter reviewed and actions planned; also establishes a communication system for informing Voyager management of action items, and responsible individuals.  |                    |   |       | ESTIMATED MANHOURS FOR SINGLE PREPARATION:   |                         | INFORMATION CUTOFF DATE OR MILESTONE:                  |                           |  |  |  |  |
|  |                    |   |       | ESTIMATED COST (\$) FOR SINGLE PREPARATION:  |                         | DATE DATA DUE TO USER:                                 |                           |  |  |  |  |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br><br>SA-001, Plan, System Safety Engineering<br>RA-007, Minutes, Failure Analysis Review Board (FARB)  |                    |   |       | FREQUENCY OF ISSUE:  |                         | PUBLICATION DATE:<br><b>PDR</b>                        |                           |  |  |  |  |
|  |                    |   |       | <input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input checked="" type="checkbox"/> OTHERWISE, AS SPECIFIED<br><b>As required</b>  |                         | UPDATE (FREQUENCY OR MILESTONE):<br><b>As required</b> |                           |  |  |  |  |
| CLASSIFICATION:  |                    |   |       | <input type="checkbox"/> GROUP 1<br><input type="checkbox"/> GROUP 2<br><input type="checkbox"/> GROUP 3<br><input type="checkbox"/> GROUP 4<br><input type="checkbox"/> PROPRIETARY<br><input type="checkbox"/> PUBLIC DOMAIN   |                         | ESTIMATED EXPIRATION DATE:                             |                           |  |  |  |  |
| <input type="checkbox"/> SECRET<br><input type="checkbox"/> CONFIDENTIAL<br><input type="checkbox"/> SECRET RESTRICTED DATA<br><input type="checkbox"/> CONFIDENTIAL RESTRICTED DATA<br><input checked="" type="checkbox"/> UNCLASSIFIED   |                    |   |       | <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> PROJECT DISCREET<br><input type="checkbox"/> NOFORN   |                         |  |                           |  |  |  |  |
| FORM OF DATA:  |                    | KIND OF DATA:   |       | REFERENCE DOCUMENTS:   |                         |  |                           |  |  |  |  |
| <input checked="" type="checkbox"/> PRINTED DOCUMENT<br><input type="checkbox"/> CHART<br><input type="checkbox"/> DIAGRAM<br><input type="checkbox"/> DRAWING<br><input type="checkbox"/> FILM (STATIC OR MOTION)<br><input type="checkbox"/> ILLUSTRATION<br><input type="checkbox"/> MODEL<br><input type="checkbox"/> RECORDING (TAPE OR DISC)<br><input type="checkbox"/> COMPUTER CARD<br><input type="checkbox"/> COMPUTER TAPE<br><input type="checkbox"/> MICROFILM (W/OR W/O CARD)<br><input type="checkbox"/> OTHER |                    | <input type="checkbox"/> ABSTRACT<br><input type="checkbox"/> BROCHURE<br><input type="checkbox"/> BULLETIN<br><input type="checkbox"/> CATALOG<br><input type="checkbox"/> CONTRACT<br><input type="checkbox"/> DIRECTIVE<br><input type="checkbox"/> DISCLOSURE<br><input type="checkbox"/> ENGINEERING CHANGE ORDER<br><input type="checkbox"/> REQUEST FOR ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> HANDBOOK<br><input type="checkbox"/> INDEX |       | <input type="checkbox"/> INSTRUCTION<br><input type="checkbox"/> LETTER<br><input type="checkbox"/> LIST<br><input type="checkbox"/> LOG<br><input type="checkbox"/> MANUAL<br><input type="checkbox"/> MEMORANDUM<br><input checked="" type="checkbox"/> MINUTES<br><input type="checkbox"/> PLAN<br><input type="checkbox"/> PROCEDURE<br><input type="checkbox"/> REGULATION<br><input type="checkbox"/> REPORT<br><input type="checkbox"/> SCHEDULE<br><input type="checkbox"/> SPECIFICATION<br><input type="checkbox"/> STANDARD<br><input type="checkbox"/> VOUCHER |                         |  |                           | NASA Safety Specs.<br>Military Safety Specs. |  |  |  |
|  |                    |   |       | APPLICABLE STANDARDS:  |                         |  |                           |  |  |  |  |
| REVIEWS AND/OR APPROVALS REQUIRED: (LIST IN ORDER OF SUBMITTAL)  |                    |   |       |  |                         |  |                           |  |  |  |  |
|  |                    | DRAFT   | DATE  | PREPUBLICATION PROOF   |                         | DATE   |                           |  |  |  |  |
| SUBMIT FOR REVIEW TO:  |                    | _____   | _____ | _____  |                         | _____  |                           |  |  |  |  |
|  |                    | _____   | _____ | _____  |                         | _____  |                           |  |  |  |  |
|  |                    | _____   | _____ | _____  |                         | _____  |                           |  |  |  |  |
|  |                    | _____   | _____ | _____  |                         | _____  |                           |  |  |  |  |
| SUBMIT FOR APPROVAL TO:  |                    | _____   | _____ | _____  |                         | _____  |                           |  |  |  |  |
|  |                    | _____   | _____ | _____  |                         | _____  |                           |  |  |  |  |
|  |                    | <b>Manager, Safety</b>  | _____ | _____  |                         | _____  |                           |  |  |  |  |
|  |                    | _____   | _____ | _____  |                         | _____  |                           |  |  |  |  |

VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

DRD NO.:

SA-007

SPECIAL INSTRUCTIONS:

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

Minutes, Integrated Safety Board

1. Title of Board
2. Date of meeting
3. Names of personnel attending
4. Purpose of board meeting
5. Subject matter discussed
6. Findings and resolutions
7. Follow up or subsequent actions necessary
8. Distribution

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

GE EXHIBIT DRD SA-008

|  |  |       |                             |  |                  |   |                           |
|--|--|-------|-----------------------------|--|------------------|---|---------------------------|
| VOYAGER DATA REQUIREMENT DESCRIPTION   |  |       |                             | DRD APPROVED BY:   |                  | DATE:   | DATA CATEGORY:            |
| ORGANIZATION ORIGINATING REQUIREMENT:  |  | CODE: | OFFICE RESPONSIBLE FOR DRD: | CODE:  | DRD PREPARED BY: | DATE:   | CONTRACT NO.:<br>DRD NO.: |
| SA   |  |       |                             |  | F. A. Boppel     | 7/28/67   | SA-008                    |
| TITLE OF DOCUMENT:<br><br>REPORT, SAFETY   |  |       |                             | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:<br><br>Safety   |                  | TASK OR SUBTASK:  | DRL ITEM NO.:             |
|  |  |       |                             | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:  |                  | DRL NO.:  | LEVEL NO.:                |
|  |  |       |                             | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:  |                  | DDL NO.:  | FILE NO.:                 |
| TYPE OF DOCUMENT:<br><input type="checkbox"/> CONTROL <input type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input checked="" type="checkbox"/> INFORMATION   |  |       |                             | ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE:   |                  | NO. OF COPIES:<br><br>25  |                           |
| USE OF DOCUMENT:<br><br>Report to management the degree of compliance with established safety requirements, during the design phases, test plan writings and range safety.   |  |       |                             | ESTIMATED MANHOURS FOR SINGLE PREPARATION:   |                  | INFORMATION CUTOFF DATE OR MILESTONE:   |                           |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br>TE-030, Procedure, Test Operating<br>SA-001, Plan, System Safety Engineering<br>RA-011, Procedure, Reliability Operating  |  |       |                             | ESTIMATED COST (\$) FOR SINGLE PREPARATION:  |                  | DATE DATA DUE TO USER:  |                           |
| CLASSIFICATION:<br><input type="checkbox"/> SECRET <input type="checkbox"/> GROUP 1 <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> CONFIDENTIAL <input type="checkbox"/> GROUP 2 <input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> SECRET RESTRICTED DATA <input type="checkbox"/> GROUP 3 <input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> CONFIDENTIAL RESTRICTED DATA <input type="checkbox"/> GROUP 4 <input type="checkbox"/> PROJECT DISCREET<br><input checked="" type="checkbox"/> UNCLASSIFIED <input type="checkbox"/> PROPRIETARY <input type="checkbox"/> NOFORN<br><input type="checkbox"/> PUBLIC DOMAIN  |  |       |                             | FREQUENCY OF ISSUE:<br><input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input checked="" type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input type="checkbox"/> OTHERWISE, AS SPECIFIED |                  | PUBLICATION DATE:<br><br>PDR<br><br>UPDATE (FREQUENCY OR MILESTONE):<br><br>Thru launch<br><br>ESTIMATED EXPIRATION DATE: |                           |
| FORM OF DATA:<br><input checked="" type="checkbox"/> PRINTED DOCUMENT <input type="checkbox"/> ABSTRACT <input type="checkbox"/> INSTRUCTION<br><input type="checkbox"/> CHART <input type="checkbox"/> BROCHURE <input type="checkbox"/> LETTER<br><input type="checkbox"/> DIAGRAM <input type="checkbox"/> BULLETIN <input type="checkbox"/> LIST<br><input type="checkbox"/> DRAWING <input type="checkbox"/> CATALOG <input type="checkbox"/> LOG<br><input type="checkbox"/> FILM (STATIC OR MOTION) <input type="checkbox"/> CONTRACT <input type="checkbox"/> MANUAL<br><input type="checkbox"/> ILLUSTRATION <input type="checkbox"/> DIRECTIVE <input type="checkbox"/> MEMORANDUM<br><input type="checkbox"/> MODEL <input type="checkbox"/> DISCLOSURE <input type="checkbox"/> MINUTES<br><input type="checkbox"/> RECORDING (TAPE OR DISC) <input type="checkbox"/> ENGINEERING CHANGE <input type="checkbox"/> PLAN<br><input type="checkbox"/> COMPUTER CARD                                  ORDER <input type="checkbox"/> PROCEDURE<br><input type="checkbox"/> COMPUTER TAPE <input type="checkbox"/> REQUEST FOR ENGINEER-<br><input type="checkbox"/> MICROFILM (W/OR W/O CARD)        ING CHANGE PROPOSAL <input checked="" type="checkbox"/> REPORT<br><input type="checkbox"/> OTHER <input type="checkbox"/> ENGINEERING CHANGE <input type="checkbox"/> SCHEDULE<br>PROPOSAL <input type="checkbox"/> SPECIFICATION<br><input type="checkbox"/> HANDBOOK <input type="checkbox"/> STANDARD<br><input type="checkbox"/> INDEX <input type="checkbox"/> VOUCHER |  |       |                             | REFERENCE DOCUMENTS:<br><br>NASA Safety Specs.<br>Military Safety Specs.<br><br>APPLICABLE STANDARDS:  |                  |   |                           |
| REVIEWS AND/OR APPROVALS REQUIRED:<br>(LIST IN ORDER OF SUBMITTAL)   |  |       |                             |  |                  |   |                           |
| SUBMIT FOR REVIEW TO:  |  | DRAFT | DATE                        | PREPUBLICATION PROOF   | DATE             |   |                           |
| _____  |  |       | _____                       | _____  | _____            |   |                           |
| _____  |  |       | _____                       | _____  | _____            |   |                           |
| _____  |  | BY    | _____                       | _____  | _____            | BY  | _____                     |
| _____  |  |       | _____                       | _____  | _____            |   |                           |
| _____  |  |       | _____                       | _____  | _____            |   |                           |
| SUBMIT FOR APPROVAL TO:  |  |       | _____                       | _____  | _____            |   |                           |
| _____  |  |       | _____                       | _____  | _____            |   |                           |
| _____  |  |       | _____                       | _____  | _____            |   |                           |
| _____  |  | BY    | _____                       | _____  | _____            | BY  | _____                     |
| _____  |  |       | _____                       | _____  | _____            |   |                           |
| _____  |  |       | _____                       | _____  | _____            |   |                           |
| Manager, Safety  |  |       | _____                       | _____  | _____            |   |                           |

DRD NO.:  
SA-008

SPECIAL INSTRUCTIONS:

This report will be broken down into sections, design phase, test plans, range safety, and periodic audits. This report should be considered by Voyager management as required reading item.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

Report, Safety

1. Introduction and scope
2. Summary matrix, approved hardware
3. Summary matrix, test plans reviewed
4. Summary OSE reviewed for safety
5. Audit reports
6. Follow-up action identification
7. Range safety
  - a. Voyager required by prime contractor
  - b. Launch center requirements

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)



GE EXHIBIT DRD SA-009

|   |          |                             |       |  |                                       |  |                 |  |  |       |      |
|---|----------|-----------------------------|-------|--|---------------------------------------|--|-----------------|--|--|-------|------|
| VOYAGER DATA REQUIREMENT DESCRIPTION  |          |                             |       | DRD APPROVED BY:   | DATE:                                 | DATA CATEGORY:   |                 |  |  |       |      |
| ORGANIZATION ORIGINATING REQUIREMENT:   | CODE: SA | OFFICE RESPONSIBLE FOR DRD: | CODE: | DRD PREPARED BY: F. A. Boppel  | DATE: 7/28/67                         | CONTRACT NO.:  | DRD NO.: SA-009 |  |  |       |      |
| TITLE OF DOCUMENT:<br><br><b>DIRECTIVE, SAFETY</b>  |          |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:<br><b>Safety</b>  | TASK OR SUBTASK:                      | DRL ITEM NO.:  |                 |  |  |       |      |
|   |          |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:  | DRL NO.:                              | LEVEL NO.:   |                 |  |  |       |      |
|   |          |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:  | DDL NO.:                              | FILE NO.:  |                 |  |  |       |      |
|   |          |                             |       | TYPE OF DOCUMENT: <input type="checkbox"/> CONTROL <input checked="" type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input type="checkbox"/> INFORMATION  |                                       |  |                 |  |  |       |      |
| USE OF DOCUMENT:<br><br>Communicates urgent safety requirements to all organizations.   |          |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE:   | NO. OF COPIES:<br><br>100             |  |                 |  |  |       |      |
|   |          |                             |       | ESTIMATED MANHOURS FOR SINGLE PREPARATION:   | INFORMATION CUTOFF DATE OR MILESTONE: |  |                 |  |  |       |      |
|   |          |                             |       | ESTIMATED COST (\$) FOR SINGLE PREPARATION:  | DATE DATA DUE TO USER:                |  |                 |  |  |       |      |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br><br>SA-001, Plan, System Safety Engineering  |          |                             |       | FREQUENCY OF ISSUE:<br><input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input checked="" type="checkbox"/> OTHERWISE, AS SPECIFIED<br><b>As required</b>   | PUBLICATION DATE:<br><br>PDR          |  |                 |  |  |       |      |
|   |          |                             |       | UPDATE (FREQUENCY OR MILESTONE):<br><b>As required</b>   |                                       |  |                 |  |  |       |      |
|   |          |                             |       | ESTIMATED EXPIRATION DATE:   |                                       |  |                 |  |  |       |      |
| CLASSIFICATION:<br><input type="checkbox"/> SECRET<br><input type="checkbox"/> CONFIDENTIAL<br><input type="checkbox"/> SECRET RESTRICTED DATA<br><input type="checkbox"/> CONFIDENTIAL RESTRICTED DATA<br><input checked="" type="checkbox"/> UNCLASSIFIED   |          |                             |       | <input type="checkbox"/> GROUP 1<br><input type="checkbox"/> GROUP 2<br><input type="checkbox"/> GROUP 3<br><input type="checkbox"/> GROUP 4<br><input type="checkbox"/> PROPRIETARY<br><input type="checkbox"/> PUBLIC DOMAIN   |                                       | <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> PROJECT DISCREET<br><input type="checkbox"/> NOFORN |                 |  |  |       |      |
| FORM OF DATA:<br><input checked="" type="checkbox"/> PRINTED DOCUMENT<br><input type="checkbox"/> CHART<br><input type="checkbox"/> DIAGRAM<br><input type="checkbox"/> DRAWING<br><input type="checkbox"/> FILM (STATIC OR MOTION)<br><input type="checkbox"/> ILLUSTRATION<br><input type="checkbox"/> MODEL<br><input type="checkbox"/> RECORDING (TAPE OR DISC)<br><input type="checkbox"/> COMPUTER CARD<br><input type="checkbox"/> COMPUTER TAPE<br><input type="checkbox"/> MICROFILM (W/OR W/O CARD)<br><input type="checkbox"/> OTHER |          |                             |       | KIND OF DATA:<br><input type="checkbox"/> ABSTRACT<br><input type="checkbox"/> BROCHURE<br><input type="checkbox"/> BULLETIN<br><input type="checkbox"/> CATALOG<br><input type="checkbox"/> CONTRACT<br><input checked="" type="checkbox"/> DIRECTIVE<br><input type="checkbox"/> DISCLOSURE<br><input type="checkbox"/> ENGINEERING CHANGE ORDER<br><input type="checkbox"/> REQUEST FOR ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> HANDBOOK<br><input type="checkbox"/> INDEX<br><input type="checkbox"/> INSTRUCTION<br><input type="checkbox"/> LETTER<br><input type="checkbox"/> LIST<br><input type="checkbox"/> LOG<br><input type="checkbox"/> MANUAL<br><input type="checkbox"/> MEMORANDUM<br><input type="checkbox"/> MINUTES<br><input type="checkbox"/> PLAN<br><input type="checkbox"/> PROCEDURE<br><input type="checkbox"/> REGULATION<br><input type="checkbox"/> REPORT<br><input type="checkbox"/> SCHEDULE<br><input type="checkbox"/> SPECIFICATION<br><input type="checkbox"/> STANDARD<br><input type="checkbox"/> VOUCHER |                                       |  |                 | REFERENCE DOCUMENTS:<br><br>NASA Safety Specs.<br>Military Safety Specs. |  |       |      |
| APPLICABLE STANDARDS:   |          |                             |       |  |                                       |  |                 |  |  |       |      |
| REVIEWS AND/OR APPROVALS REQUIRED:<br>(LIST IN ORDER OF SUBMITTAL)  |          |                             |       |  |                                       |  |                 |  |  |       |      |
|   |          | DRAFT                       |       |  | DATE                                  |  |                 | PREPUBLICATION PROOF   |  |       | DATE |
| SUBMIT FOR REVIEW TO:   |          | _____                       |       | _____  |                                       | _____  |                 | _____  |  | _____ |      |
|   |          | BY _____                    |       | _____  |                                       | _____  |                 | BY _____   |  | _____ |      |
|   |          | _____                       |       | _____  |                                       | _____  |                 | _____  |  | _____ |      |
|   |          | _____                       |       | _____  |                                       | _____  |                 | _____  |  | _____ |      |
| SUBMIT FOR APPROVAL TO:   |          | Project Manager             |       | BY _____   |                                       | _____  |                 | _____  |  | _____ |      |
|   |          | _____                       |       | _____  |                                       | _____  |                 | _____  |  | _____ |      |

DRD NO.:

SA-009

SPECIAL INSTRUCTIONS:

Safety directives are the responsibility of management, and as such are mandatory reading.

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

The Safety directive will be a document requiring mandatory compliance by all operations concerned. It will be issued by the Safety Operation, Voyager. This directive has the authority to stop work.

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

|   |                    |                             |       |  |                         |  |                           |  |  |
|---|--------------------|-----------------------------|-------|--|-------------------------|--|---------------------------|--|--|
| VOYAGER DATA REQUIREMENT DESCRIPTION  |                    |                             |       | DRD APPROVED BY:   |                         | DATE:  | DATA CATEGORY:            |  |  |
| ORGANIZATION ORIGINATING REQUIREMENT:   | CODE:<br><b>SA</b> | OFFICE RESPONSIBLE FOR DRD: | CODE: | DRD PREPARED BY:<br><b>F. A. Boppel</b>  | DATE:<br><b>7/28/67</b> | CONTRACT NO.:  | DRD NO.:<br><b>SA-010</b> |  |  |
| TITLE OF DOCUMENT:<br><br><b>REPORT, PERSONNEL CERTIFICATION PROGRAM</b>  |                    |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:<br><b>Safety</b>  |                         | TASK OR SUBTASK:   | DRL ITEM NO.:             |  |  |
|   |                    |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:  |                         | DRL NO.:   | LEVEL NO.:                |  |  |
|   |                    |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:  |                         | DDL NO.:   | FILE NO.:                 |  |  |
| TYPE OF DOCUMENT: <input type="checkbox"/> CONTROL <input type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input checked="" type="checkbox"/> INFORMATION   |                    |                             |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE:   |                         | NO. OF COPIES:<br><b>25</b>  |                           |  |  |
| USE OF DOCUMENT:<br><br><b>Report is used to inform management of certification program status</b>  |                    |                             |       | ESTIMATED MANHOURS FOR SINGLE PREPARATION:   |                         | INFORMATION CUTOFF DATE OR MILESTONE:  |                           |  |  |
|   |                    |                             |       | ESTIMATED COST (\$) FOR SINGLE PREPARATION:  |                         | DATE DATA DUE TO USER:   |                           |  |  |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br><br><b>SA-001, Plan, System Safety Engineering<br/>SA-003, Report, Safety Training Program</b>   |                    |                             |       | FREQUENCY OF ISSUE:<br><input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input checked="" type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input type="checkbox"/> OTHERWISE, AS SPECIFIED   |                         | PUBLICATION DATE:<br><b>PDR</b>  |                           |  |  |
|   |                    |                             |       |  |                         | UPDATE (FREQUENCY OR MILESTONE):<br><b>Thru launch</b>   |                           |  |  |
|   |                    |                             |       |  |                         | ESTIMATED EXPIRATION DATE:   |                           |  |  |
| CLASSIFICATION:<br><input type="checkbox"/> SECRET<br><input type="checkbox"/> CONFIDENTIAL<br><input type="checkbox"/> SECRET RESTRICTED DATA<br><input type="checkbox"/> CONFIDENTIAL RESTRICTED DATA<br><input checked="" type="checkbox"/> UNCLASSIFIED   |                    |                             |       | <input type="checkbox"/> GROUP 1<br><input type="checkbox"/> GROUP 2<br><input type="checkbox"/> GROUP 3<br><input type="checkbox"/> GROUP 4<br><input type="checkbox"/> PROPRIETARY<br><input type="checkbox"/> PUBLIC DOMAIN   |                         | <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> PROJECT DISCREET<br><input type="checkbox"/> NOFORN |                           |  |  |
| FORM OF DATA:<br><input checked="" type="checkbox"/> PRINTED DOCUMENT<br><input type="checkbox"/> CHART<br><input type="checkbox"/> DIAGRAM<br><input type="checkbox"/> DRAWING<br><input type="checkbox"/> FILM (STATIC OR MOTION)<br><input type="checkbox"/> ILLUSTRATION<br><input type="checkbox"/> MODEL<br><input type="checkbox"/> RECORDING (TAPE OR DISC)<br><input type="checkbox"/> COMPUTER CARD<br><input type="checkbox"/> COMPUTER TAPE<br><input type="checkbox"/> MICROFILM (W/OR W/O CARD)<br><input type="checkbox"/> OTHER |                    |                             |       | KIND OF DATA:<br><input type="checkbox"/> ABSTRACT<br><input type="checkbox"/> BROCHURE<br><input type="checkbox"/> BULLETIN<br><input type="checkbox"/> CATALOG<br><input type="checkbox"/> CONTRACT<br><input type="checkbox"/> DIRECTIVE<br><input type="checkbox"/> DISCLOSURE<br><input type="checkbox"/> ENGINEERING CHANGE ORDER<br><input type="checkbox"/> REQUEST FOR ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> HANDBOOK<br><input type="checkbox"/> INDEX |                         |  |                           | REFERENCE DOCUMENTS:<br><br><b>NASA Safety Specs<br/>Military Safety Specs</b> |  |
|   |                    |                             |       | APPLICABLE STANDARDS:  |                         |  |                           |  |  |
| REVIEWS AND/OR APPROVALS REQUIRED:<br>(LIST IN ORDER OF SUBMITTAL)  |                    |                             |       |  |                         |  |                           |  |  |
|   |                    | DRAFT                       |       | DATE   |                         | PREPUBLICATION PROOF   |                           |  |  |
|   |                    |                             |       |  |                         | DATE   |                           |  |  |
| SUBMIT FOR REVIEW TO: _____   |                    | _____                       |       | _____  |                         | _____  |                           |  |  |
|   |                    | BY _____                    |       | _____  |                         | BY _____   |                           |  |  |
|   |                    | _____                       |       | _____  |                         | _____  |                           |  |  |
|   |                    | _____                       |       | _____  |                         | _____  |                           |  |  |
| SUBMIT FOR APPROVAL TO: <b>Manager, Safety</b>  |                    | BY _____                    |       | _____  |                         | BY _____   |                           |  |  |
|   |                    | _____                       |       | _____  |                         | _____  |                           |  |  |

## VOYAGER DATA REQUIREMENT DESCRIPTION - 2ND SHEET

SPECIAL INSTRUCTIONS:

DRD NO.:

SA-010

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

## Report, Personnel Certification Program

1. Introduction and scope
2. Requirements and objectives
  - a. Personnel
  - b. Flight hardware
  - c. Test equipment
  - d. Handling equipment
  - e. Facilities equipment
3. Plans and schedules
4. Personnel certified listing

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

GE EXHIBIT DRD SA-011

|  |                    |   |       |   |                         |  |                           |
|--|--------------------|---|-------|---|-------------------------|--|---------------------------|
| VOYAGER DATA REQUIREMENT DESCRIPTION   |                    |   |       | DRD APPROVED BY:  |                         | DATE:  | DATA CATEGORY:            |
| ORGANIZATION ORIGINATING REQUIREMENT:  | CODE:<br><b>SA</b> | OFFICE RESPONSIBLE FOR DRD:   | CODE: | DRD PREPARED BY:<br><b>F. A. Boppel</b>   | DATE:<br><b>7/28/67</b> | CONTRACT NO.:  | DRD NO.:<br><b>SA-011</b> |
| TITLE OF DOCUMENT:<br><br><b>REPORT, ORDNANCE ACCOUNTABILITY</b>   |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT PREPARATION:<br><b>Safety</b>   |                         | TASK OR SUBTASK:                                       | DRL ITEM NO.:             |
|  |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT REPRODUCTION:   |                         | DRL NO.:   | LEVEL NO.:                |
|  |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT DISTRIBUTION:   |                         | DDL NO.:   | FILE NO.:                 |
| TYPE OF DOCUMENT: <input type="checkbox"/> CONTROL <input type="checkbox"/> ACTION <input type="checkbox"/> REFERENCE <input checked="" type="checkbox"/> INFORMATION  |                    |   |       | ORGANIZATION RESPONSIBLE FOR DOCUMENT STOWAGE:  |                         | NO. OF COPIES:<br><b>25</b>                            |                           |
| USE OF DOCUMENT:<br><br><b>Provide management with an accounting report in the area of ordnance hardware</b>   |                    |   |       | ESTIMATED MANHOURS FOR SINGLE PREPARATION:  |                         | INFORMATION CUTOFF DATE OR MILESTONE:                  |                           |
|  |                    |   |       | ESTIMATED COST (\$) FOR SINGLE PREPARATION:   |                         | DATE DATA DUE TO USER:                                 |                           |
| INTERRELATIONSHIP WITH OTHER DATA REQUIREMENTS:<br><br><b>SA-001, Plan, System Safety Engineering</b>  |                    |   |       | FREQUENCY OF ISSUE:   |                         | PUBLICATION DATE:<br><b>PDR</b>                        |                           |
|  |                    |   |       | <input type="checkbox"/> ANNUALLY<br><input type="checkbox"/> SEMI-ANNUALLY<br><input type="checkbox"/> QUARTERLY<br><input type="checkbox"/> BI-MONTHLY<br><input checked="" type="checkbox"/> MONTHLY<br><input type="checkbox"/> SEMI-MONTHLY<br><input type="checkbox"/> BI-WEEKLY<br><input type="checkbox"/> WEEKLY<br><input type="checkbox"/> DAILY<br><input type="checkbox"/> OTHERWISE, AS SPECIFIED |                         | UPDATE (FREQUENCY OR MILESTONE):<br><b>Thru launch</b> |                           |
|  |                    |   |       |   |                         | ESTIMATED EXPIRATION DATE:                             |                           |
| CLASSIFICATION:  |                    |   |       | <input type="checkbox"/> SPECIAL HANDLING<br><input type="checkbox"/> NASA DISCREET<br><input type="checkbox"/> JPL DISCREET<br><input type="checkbox"/> PROJECT DISCREET<br><input type="checkbox"/> NOFORN  |                         |  |                           |
| <input type="checkbox"/> SECRET <input type="checkbox"/> GROUP 1<br><input type="checkbox"/> CONFIDENTIAL <input type="checkbox"/> GROUP 2<br><input type="checkbox"/> SECRET RESTRICTED DATA <input type="checkbox"/> GROUP 3<br><input type="checkbox"/> CONFIDENTIAL RESTRICTED DATA <input type="checkbox"/> GROUP 4<br><input checked="" type="checkbox"/> UNCLASSIFIED <input type="checkbox"/> PROPRIETARY<br><input type="checkbox"/> PUBLIC DOMAIN  |                    |   |       |   |                         |  |                           |
| FORM OF DATA:  |                    | KIND OF DATA:   |       | REFERENCE DOCUMENTS:<br><br><b>NASA Safety Specs.<br/>Military Safety Specs.</b>  |                         |  |                           |
| <input checked="" type="checkbox"/> PRINTED DOCUMENT<br><input type="checkbox"/> CHART<br><input type="checkbox"/> DIAGRAM<br><input type="checkbox"/> DRAWING<br><input type="checkbox"/> FILM (STATIC OR MOTION)<br><input type="checkbox"/> ILLUSTRATION<br><input type="checkbox"/> MODEL<br><input type="checkbox"/> RECORDING (TAPE OR DISC)<br><input type="checkbox"/> COMPUTER CARD<br><input type="checkbox"/> COMPUTER TAPE<br><input type="checkbox"/> MICROFILM (W/OR W/O CARD)<br><input type="checkbox"/> OTHER |                    | <input type="checkbox"/> ABSTRACT<br><input type="checkbox"/> BROCHURE<br><input type="checkbox"/> BULLETIN<br><input type="checkbox"/> CATALOG<br><input type="checkbox"/> CONTRACT<br><input type="checkbox"/> DIRECTIVE<br><input type="checkbox"/> DISCLOSURE<br><input type="checkbox"/> ENGINEERING CHANGE ORDER<br><input type="checkbox"/> REQUEST FOR ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> ENGINEERING CHANGE PROPOSAL<br><input type="checkbox"/> HANDBOOK<br><input type="checkbox"/> INDEX |       |   |                         |  |                           |
| APPLICABLE STANDARDS:  |                    |   |       |   |                         |  |                           |
| REVIEWS AND/OR APPROVALS REQUIRED:<br>(LIST IN ORDER OF SUBMITTAL)   |                    |   |       |   |                         |  |                           |
|  |                    | DRAFT   | DATE  | PREPUBLICATION PROOF  |                         | DATE   |                           |
| SUBMIT FOR REVIEW TO:  |                    | _____   | _____ | _____   |                         | _____  |                           |
|  |                    | BY  | _____ |   |                         | BY   | _____                     |
|  |                    | _____   | _____ | _____   |                         | _____  |                           |
|  |                    | BY  | _____ |   |                         | BY   | _____                     |
| SUBMIT FOR APPROVAL TO:  |                    | <b>Manager, Safety</b>  | _____ | _____   |                         | _____  |                           |
|  |                    | BY  | _____ |   |                         | BY   | _____                     |
|  |                    | _____   | _____ | _____   |                         | _____  |                           |

SPECIAL INSTRUCTIONS:

DRD NO.:  
SA-011

SPECIAL DISTRIBUTION: (IF DISTRIBUTION IS NOT COVERED BY AN EXISTING DDL WRITE IN DISTRIBUTION BELOW)

OUTLINE OF CONTENTS:

Report, Ordnance Accountability

1. Introduction and scope
2. Summary of accountable items
3. Applicable documents
4. Quantitative listing
5. Authorization for withdrawal list

(CONTINUE ON THIRD SHEET, IF NECESSARY, AND AFFIX TO THIS DRD.)

## DOCUMENTATION RELATIONSHIP TREES

A documentation relationship tree has been prepared to further develop the data base interrelationships by identifying and presenting pictorially the relationships of all Voyager contractor data items within each functional category and by showing their relationships across categories.

Relationships within the functional category are shown by constructing a tier pattern beginning with the top level (or governing) data item and relating, in descending order, all data items within the category to this top level data item. (The location of a data item at a given level on the diagram does not necessarily indicate the importance of that specific item but identifies and defines its relation to all other data items in that category.)

Relationships between data items in one category and data items in other functional categories are shown by: (1) arrows to indicate the direction of the relationship, and (2) an alphabetic code to indicate the nature of the interrelationship as follows:

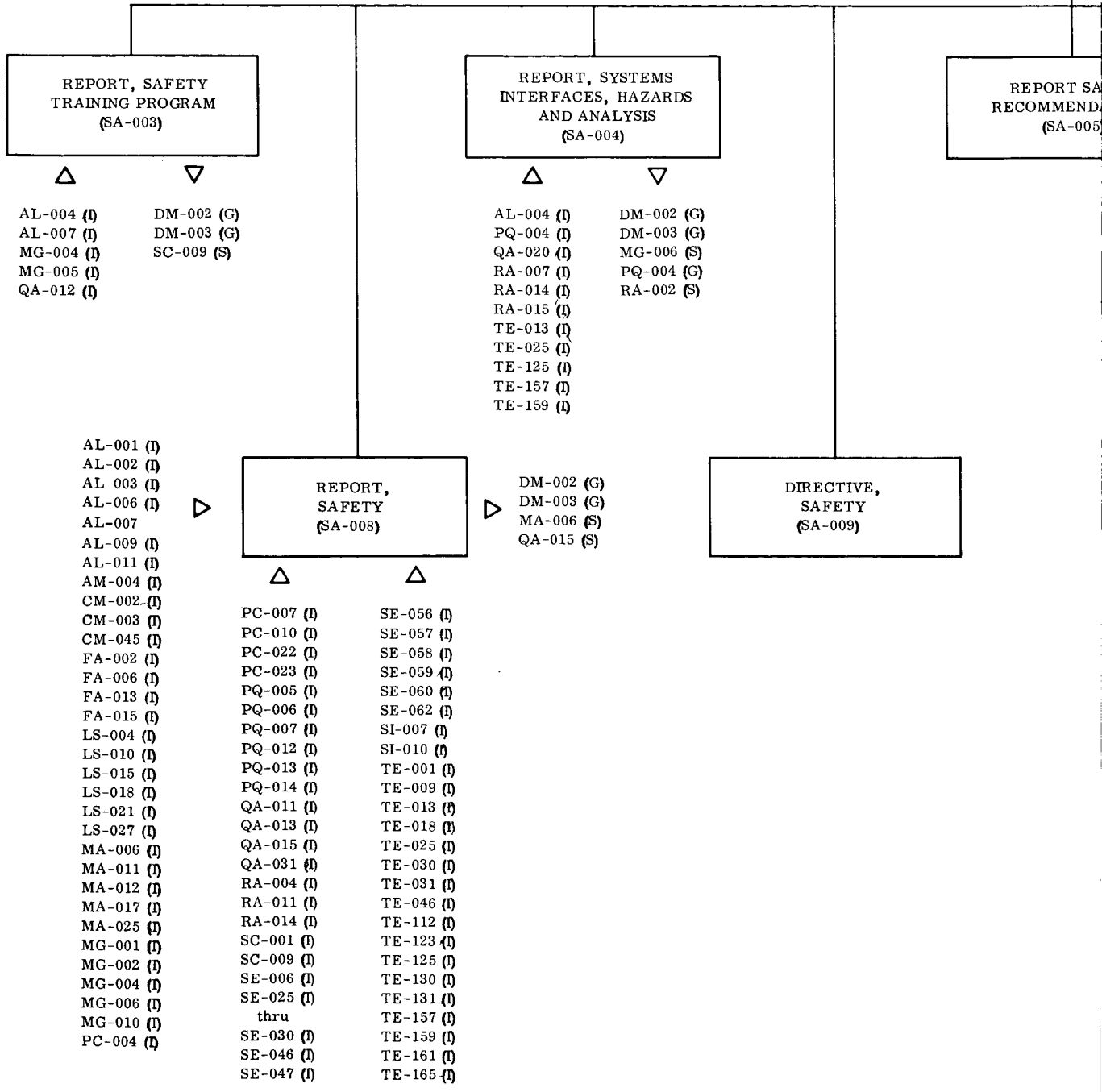
- a. Data items needed for preparation and/or support of the referenced item. (I)
- b. Data items supported or needed by this data item. (S)
- c. Data items that relate "to" and provide information of a general nature but are not required in an input or support role. (G)

Each data item appearing on the Data Item List (DIL) was examined and evaluated with respect to its contribution to, or dependence on, data items appearing in other categories, and is included in the diagrams.

PLAN, SYSTEMS  
SAFETY ENGINEER  
(SA-001)

- AM-001 (I) ▷
- AM-007 (I)
- DM-001 (I)
- DM-002 (I)
- DM-003 (I)
- DM-114 (I)
- MA-002 (I)
- MA-003 (I)
- MA-004 (I)
- MA-009 (I)
- MF-006 (I)
- MG-003 (I)
- MG-008 (I)
- MG-009 (I)
- PC-004 (I)
- PC-011 (I)

- ▷
- PC-012 (I)
- PC-017 (I)
- PQ-004 (I)
- QA-004 (I)
- RA-001 (I)
- RP-004 (I)
- SC-002 (I)
- SC-007 (I)
- SI-001 (I)
- SI-002 (I)
- SI-006 (I)
- SI-007 (I)





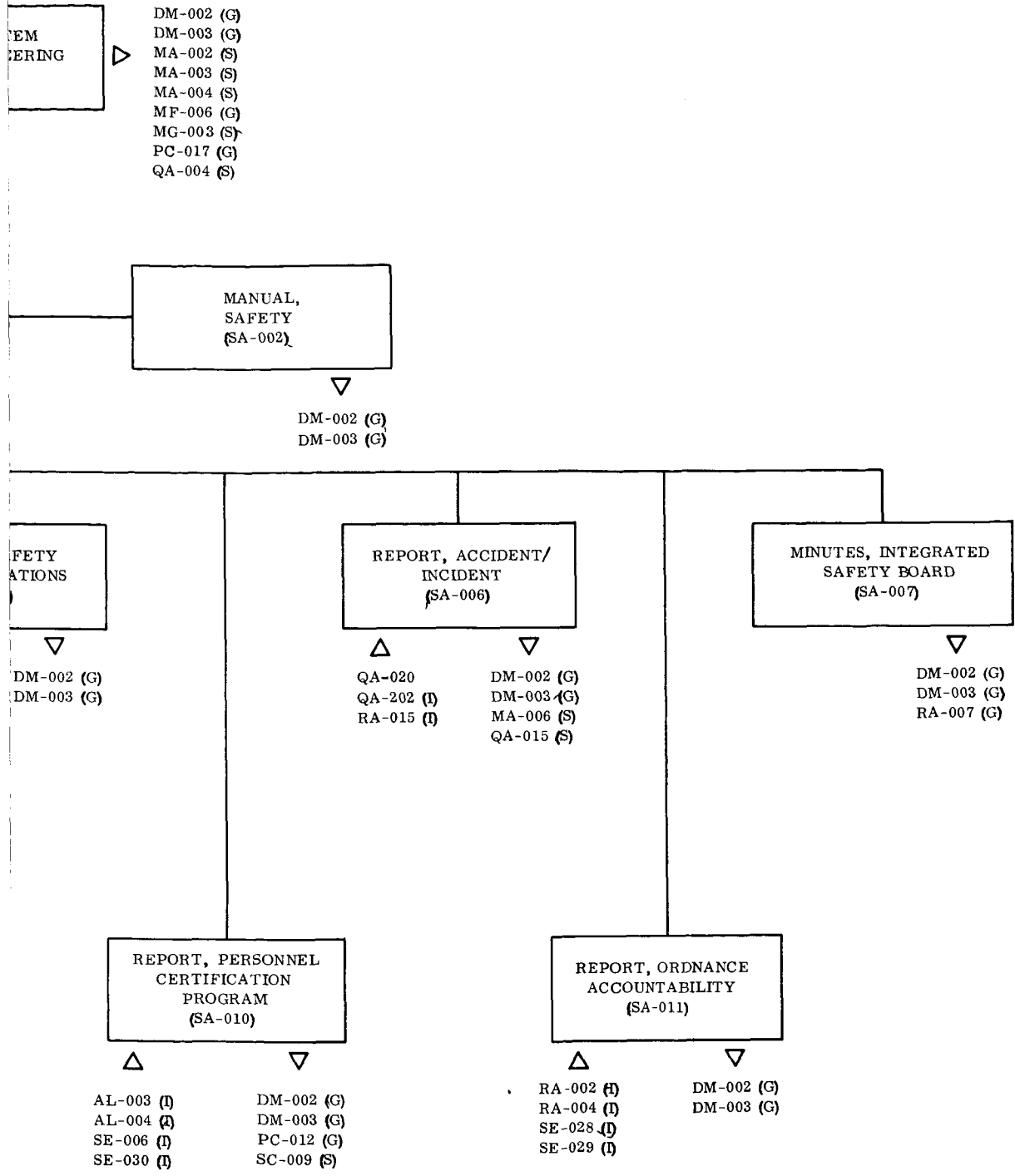


Figure M-4. Safety Documentation Relationship Tree (SA)

## DATA ITEM PHASING, FREQUENCY

The Data Item Frequency and Phasing chart shows the requirements for contractor data item preparation by major project review periods. It is concerned with the phasing and frequency of preparation of each individual data item and not the total number of copies required for reproduction and distribution.

The following legend and/or abbreviations have been used:

|        |   |
|--------|---|
| A      | Annual                                    |
| S/A    | Semi Annual                               |
| WK     | Weekly                                    |
| MO     | Monthly                                   |
| B/W    | Biweekly                                  |
| B/M    | Bimonthly                                 |
| O/T    | One time                                  |
| A/R    | As required                               |
| U      | Update                                    |
| I/U    | One update                                |
| DA     | Daily                                     |
| Q      | Quarterly                                 |
| I      | Initial                                   |
| F      | Final                                     |
| N/R    | New and revised                           |
| SDR    | System design review                      |
| PDR    | Preliminary design review                 |
| HDR    | Hard design review                        |
| CDR    | Critical design review                    |
| FACI   | First article configuration inspection    |
| MAR    | Mission acceptance review                 |
| J FACT | Joint flight acceptance composite testing |

DATA ITEM TITLE

SAFETY

QUAN

DIRECTIVES

SA-009 Directive, Safety

MANUALS

SA-002 Manual, Safety

MINUTES

SA-007 Minutes, Integrated Safety Board Meetings

PLANS

SA-001 Plan, System Safety Engineering

REPORTS

SA-003 Report, Safety Training Program

SA-004 Report, Systems Interfaces, Hazards, and Analysis

SA-005 Report, Safety Recommendations

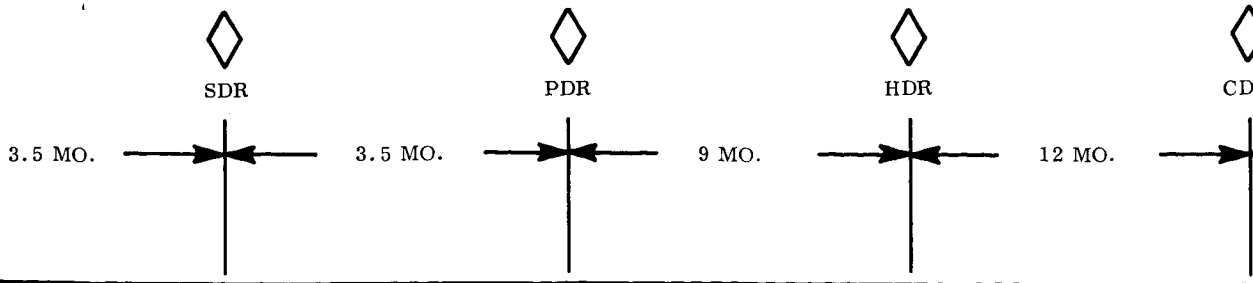
SA-006 Report, Accident/Incident

SA-008 Report, Safety

SA-010 Report, Personnel Certification Program

SA-011 Report, Ordnance Accountability

TOTAL



| FREQ | TOTAL | QUAN | FREQ | TOTAL | QUAN | FREQ | TOTAL | QUAN | FREQ | TOTAL |
|------|-------|------|------|-------|------|------|-------|------|------|-------|
|      |       | 1    | I    | 1     | 1    | A/R  | 12    | 1    | A/R  | 12    |
|      |       | 1    | I    | 1     | 1    | U/Q  | 3     | 1    | U/SA | 2     |
|      |       | 1    | I    | 1     | 1    | A/R  | 3     | 1    | A/R  | 4     |
|      |       | 1    | I    | 1     | 1    | U/Q  | 3     | 1    | U/SA | 2     |
|      |       | 1    | I    | 1     | 1    | U/Q  | 3     | 1    | U/SA | 2     |
|      |       | 1    | I    | 1     | 1    | U/Q  | 3     | 1    | U/Q  | 4     |
|      |       | 1    | I    | 1     | 1    | U/Q  | 3     | 1    | U/Q  | 4     |
|      |       | 1    | I    | 1     | 1    | M    | 9     | 1    | M    | 12    |
|      |       | 1    | I    | 1     | 1    | M    | 9     | 1    | M    | 12    |
|      |       | 1    | I    | 1     | 1    | M    | 9     | 1    | M    | 12    |
|      |       | 1    | I    | 1     | 1    | M    | 9     | 1    | M    | 12    |
|      |       |      |      |       | 11   |      | 66    |      |      | 78    |

