GP-509
January 24, 1969
Supersedes All
Previous Editions

JOHN F. KENNEDY SPACE CENTER

GUIDE FOR CONTRACTOR SAFETY PLANS AT JOHN F. KENNEDY SPACE CENTER

N70-75911
~~X69-73463~~
(ACCESSION NUMBER) (THRU)
12 None
(PAGES) (CODE)
TMX 61613
(NASA CR OR TMX OR AD NUMBER) (CATEGORY)
FF No. 602(B)
AVAILABLE TO NASA AND NASA CONTRACTORS ONLY

SAFETY OFFICE
JOHN F. KENNEDY SPACE CENTER, NASA

JOHN F. KENNEDY SPACE CENTER, NASA

GP-509

GUIDE FOR CONTRACTOR SAFETY PLANS AT JOHN F. KENNEDY SPACE CENTER

John R. Atkins
Director, Safety Office

TABLE OF CONTENTS

SECTION		PAGE
I	INTRODUCTION	
1-1	General	1
1-2	Purpose	1
1-3	Scope	1
1-4	Policy Statement	2
1-5	Authority	2
II	OBJECTIVES	
2-1	Functional Elements	3
2-2	Minimum Requirements	3
2-3	Use of Proven Techniques	3
III	RESPONSIBILITIES	
3-1	Management Responsibilities	5
3-2	Safety Engineer	5
3-3	Company Supervisors	5
3-4	Employee Responsibilities	5
3-5	Safety Committees	6
IV	SAFETY TASKS	
4-1	Employee Safety Training and Motivation	7
4-2	Safety Enforcement	7
4-3	Procedures Review	7
4-4	Safety Inspections	7
4-5	Accident Investigation	8
4-6	Program Interfaces	8
4-7	Systems Safety Effort	8
4-8	Summary Report	9
4-9	Appendixes and Attachments	9

SECTION I
INTRODUCTION

1-1 GENERAL

The John F. Kennedy Space Center (KSC) is a large, complex government installation, engaged in many aspects of NASA's operational, industrial, and research programs. KSC is the only installation outside the Union of Soviet Socialist Republics charged with the responsibility of launching rockets carrying human passengers into space. Many of KSC's operational functions in support of spaceflight are unique, and require the application of safety techniques not in common use. Other KSC functions in the industrial and research areas are more closely related to those in common practice throughout the United States of America, but even here the frequent use of new and often exotic materials poses special requirements.

KSC is an unusual installation, but the planning and conducting of an effective safety program requires reliance on the known, proven methods that have been effective in reducing accidents throughout American industry. Where unique or unusual hazards exist, unique precautions may be required. Those contractors who work with or in close proximity to cryogenic, hypergolic, or other uncommon highly hazardous materials must recognize their unusual responsibilities and plan their safety programs accordingly.

1-2 PURPOSE

The primary purpose of any safety program is to prevent injuries to personnel; a secondary purpose is to prevent damage to equipment. At KSC, a contractor's safety plan should contain all the information needed to formulate and implement the best possible overall safety program. Subject to any other contractual or legal restrictions, this document will serve as a general guide to aid contractors in preparing their plans. The specifics of any given plan must necessarily vary with the type of work performed by the contractor, but the basic approach should be similar to that outlined throughout the remainder of this document. The format used here would be acceptable for a contractor's plan.

Questions pertaining to the provisions of this document should be referred to the KSC Industrial Safety Office, SF-IND (telephone 867-4317).

1-3 SCOPE

The contractor's safety plan should provide guidelines and assign responsibilities for implementing its safety program in all areas under KSC control. The areas of document

effectivity should be stated, and the fact the plan is binding on all employees. Relationships and tie-ins with other contractor documents should be noted. The plan should be designed as a subsidiary to, and complementary with, the NASA/KSC safety documentation and directives already in existence. Where such documents serve the contractor's purpose without change or deviation, they may be referenced and become a part of its program at KSC.

1-4 POLICY STATEMENT

The policy statement should express the views of contractor management on accident prevention and the general safety of its personnel working in all areas under KSC control. The fact that safety is of paramount importance to every individual, and of overriding concern to contractor management, should be emphasized. It should be perfectly clear that the employer is interested in the health and welfare of every employee.

1-5 AUTHORITY

The contractor's firm intention of having an effective safety program at KSC should be implemented by the delegation of all necessary authority to its top local safety officer. The various KSC Kennedy Management Instructions and Directives which the contractor's safety program is designed to satisfy, including this document, should be cited. If there are deviations from standard company practices concerning the delegation of authority, these deviations should be spelled out in all necessary detail. It should be made clear to all employees that KSC contractors often work closely together, and professional safety personnel, regardless of their employer, are working for the benefit of everyone.

SECTION II
OBJECTIVES

2-1 FUNCTIONAL ELEMENTS

The specific safety functions associated with each primary functional element of the contractor's operations at KSC should be explained in detail. An organization chart is recommended, with the interrelationships between the functional elements and the safety department clearly shown. Those details of coordination that are necessary to ensure a smoothly functioning safety program should be covered in this part of the plan. If assigned responsibilities include two different types of unrelated work, such as common industrial shops in one area and 'KSC unique' operations in another, two or more charts may be necessary.

2-2 MINIMUM REQUIREMENTS

There are certain minimum requirements imposed on any contractor at KSC, due to the unusual number of interfaces with other contractors and civil service personnel. Contractors will not furnish medical services on the grounds of KSC unless contractually obligated to do so. Medical facilities are furnished in several areas. All contractors working at KSC may be required to furnish representatives to the KSC sponsored safety committees, as appropriate. An overall contractor safety plan for work performed at KSC must be formulated and submitted through the Contracting Officer to the KSC Safety Office, per the requirements outlined in this document. This plan must be approved by the KSC Safety Office. All safety directives must be implemented, unless a waiver or deviation is issued by the Safety Office. Any disagreements pertaining to contractual requirements will be referred to the cognizant Contracting Officer. All personnel are expected to abide by the instructions outlined in detail in the documents issued by the Safety Office, and to obtain and become familiar with all such documents pertaining to their responsibilities. Guidance and help may be obtained from the KSC Safety Office.

2-3 USE OF PROVEN TECHNIQUES

KSC's unique role in the space program imposes requirements on KSC-peculiar operations that can only be met by originating new safety techniques. These new techniques should be based on the known, proven methods that have been effective in reducing accidents throughout American industry. The majority of the day-to-day work performed at KSC, however, is similar to that found in industrial plants. Many of these proven accident prevention techniques can be applied directly to contractor operations at KSC. All contractors should include in their safety plan a restatement of the safety policies

in effect at their plants that apply also at KSC, or reference the appropriate documents and other written material. Copies of these documents must be furnished to the KSC Safety Office along with the proposed safety plan.

A secondary but important benefit of the use of proven accident prevention techniques is decreased equipment damage and consequent higher operational reliability. At KSC, where accidental damage to equipment can delay the launch of a space vehicle, operational reliability greatly decreases costs. The cheapest way to launch any space vehicle is "on schedule". Although expense will always be secondary to the saving of human life, this important factor should not be neglected in preparing a safety plan.

SECTION III
RESPONSIBILITIES

3-1 MANAGEMENT RESPONSIBILITIES

The functions of contractor management, as related to the origination and implementation of a KSC safety program, should be provided in broad detail. If the contractor's safety program is partially implemented through committees or boards, these functions should be outlined, with a chart if necessary. The delegation of authority from the highest local management to the Safety Engineer, Director, or other full-time safety supervisor should be clearly stated.

Employee certification procedures should be designed to promote awareness of the role of safe task performance to individual well-being and overall efficiency, and to ensure that the personnel assigned to each of the many hazardous operations of the space program are capable of performing to relatively high safety standards. Such certification by the contractor is considered essential to safeguard lives and property in operations where critical positions are subject to turnover, shift changes, retirement, or other personnel substitution.

3-2 SAFETY ENGINEER

The highest member of contractor management who devotes his full time to safety is usually called the Safety Engineer, Safety Director, or other appropriate title. He will be the active administrator of the contractor's safety program at KSC, and his duties should be outlined in detail. The relationship of the Safety Engineer to safety committees, boards, etc., should be defined, as well as his responsibility for participating in KSC Safety Office sponsored cooperative programs.

3-3 COMPANY SUPERVISORS

All members of contractor management share a responsibility to conduct the best possible safety program, but the line supervisor who deals directly with the men performing hazardous work is the key man in any safety program. To the majority of working men the local supervisor represents company management, and his attitudes, ideas, and actions have a strong influence on his crew. The supervisor's basic responsibilities under the contractor's safety plan should be thoroughly delineated, and provisions made to impress on him how important it is that he fully implement the safety program which the plan establishes.

3-4 EMPLOYEE RESPONSIBILITIES

In the final analysis the person who can do most to promote an employee's safety is the employee. Every individual has the responsibility to himself, his family, and his loved

ones, to keep himself safe from harm. It is obvious that the person who suffers most when an injury occurs is the injured employee. The contractor's plan should emphasize efforts to train each person in safe work habits, keep him always safety conscious, and aid him in preventing accidents.

3-5 SAFETY COMMITTEES

The formation of safety committees is an effective means of reducing the accident rate for contractor employees, and one recommended by the KSC Safety Office. These committees allow a contractor to draw on a very valuable asset, the combined knowledge and experience of its employees. The basic function of safety committees is to reduce accidents by creating and maintaining an active interest in safety among all employees. Where committees have been used, they have proven notably effective. Committees usually include representatives from the contractor's shops, operating officials, supervisors, and foremen. The eight types most common in American industry are:

a. Company or interplant committee
b. Plant central committee
c. Departmental safety committee
d. Foremen's committee
e. Workmen's committee
f. Joint labor-management committee
g. Inspection committee
h. "Get it done" committee

A major suggestion advocated by many safety committees is the adoption of a safety suggestion system, with some form of reward, either in money or personal recognition, for accepted suggestions. These committees have also proven effective in stimulating both committee members and other employees to search for and submit worthwhile safety suggestions.

Contractor management should encourage safety committee members by due recognition of their contribution to the safety program. This recognition can be in the form of letters of appreciation, certificates of service, cards or badges of membership, or special periodic dinners for committee members. The safety committees are an excellent vehicle through which contractor management can convince all employees of management's sincere interest in every man's personal safety.

SECTION IV
SAFETY TASKS

4-1 EMPLOYEE SAFETY TRAINING AND MOTIVATION

The most effective safety programs are those which convince employees to work safely at all times, and prepare them to do so. There are many effective ways of convincing employees of the importance of safety, but safety training is necessarily dependent on the type of work the contractor performs. Each contractor should maintain a safety training program as part of the overall safety effort, and safety management should have the authority to draw on other company departments for expert assistance in preparing special training programs. Special emphasis should be assigned to those contractor operations at KSC that involve unusual or especially dangerous materials. This portion of the contractor's plan should outline methods of employee motivation, and the planned or existing employee safety training programs.

4-2 SAFETY ENFORCEMENT

All personnel working at KSC are expected to conduct themselves in a manner that will ensure their own safety, and the safety of their associates. Contractor's penalties for unacceptable behavior--such as horseplay, dangerous practical jokes, speeding on KSC roads, etc.--should be stated in this section, or referenced if too detailed for inclusion. No safety program can be effective unless it contains strong provisions for enforcement. Consistently unsafe workers are a danger both to themselves and their associates, and repeated disregard of safety instructions is cause for dismissal in most companies. This section of the plan should state contractor penalties for noncompliance with safety regulations, and outline means of checking and enforcing employee compliance with the safety rules.

4-3 PROCEDURES REVIEW

The contractor's safety plan must establish provisions to review and update all company-issued technical operating procedures. This review must ensure that all procedures are properly marked as hazardous or non-hazardous, and have adequate emergency provisions for each hazardous operation. These procedures will be forwarded to the KSC Safety Office (SF-OPN) for approval prior to use.

4-4 SAFETY INSPECTIONS

Each contractor should plan and conduct safety inspections in areas under its surveillance, on a regularly scheduled basis. Inspection schedules shall be submitted to the KSC Safety Office (SF-IND) 30 days in advance of the first scheduled inspection. In addition,

unscheduled inspections are often beneficial, especially if new machinery has been installed or an area's accident rate rises without apparent cause. The primary intent of a safety inspection is to eliminate potential hazards, not find fault or penalize personnel. This part of the plan should contain the contractor's inspection procedures, including any provisions for joint inspections with NASA or coordinated inspections with other contractor safety departments.

4-5 ACCIDENT INVESTIGATION

All accidents that occur on KSC territory or under KSC jurisdiction must be reported on KSC Form 6-2 (Rev 4/64), "Record of Injury." Where circumstances are unusual, or injury to personnel or damage to equipment is severe, an investigation may be warranted. All contractors are expected to cooperate fully with the Safety Office, or other concerned KSC Agency, in conducting such investigations. In addition, the contractor may wish to investigate accidents of lesser magnitude, if frequency or other causes indicate a problem exists. This portion of the plan should state the contractor's policy on investigations, and outline the means of implementation.

4-6 PROGRAM INTERFACES

Most contractors working at KSC will necessarily have interfaces with other contractors and KSC Safety office programs. Several interfaces have been mentioned in the preceding sections of this guide, but any important contacts not previously covered should be detailed here.

4-7 SYSTEMS SAFETY EFFORT

Systems Safety is a means of applying scientific and engineering principles, techniques, and analyses to reduce risks and hazards to the lowest level permitted by the nature of a given program. Systems Safety is applied throughout all phases of a program's life cycle, starting in the design stage with a systematic approach to identifying hazards and establishing safety criteria. The tasks necessary to satisfy the criteria must be defined and accomplished, including performing analyses and data reviews to measure the degree of compliance. Systems Safety identifies requirements for design and procedure changes, including the initiation of protective or warning systems that will contribute to the prevention, elimination, or reduction of hazards.

Systems Safety has accident prevention as its basic objective, and is concerned with the conceptual, definition, design and development, and use phases of the program. In addition to stressing in-line system or mission elements, Systems Safety considers all supporting systems and components, such as facilities, test and measurement, transportation, and personnel. Systems Safety also deals with all situations involved in the processing of operating systems, including integrating the work of interfacing disciplines as they relate to safety considerations.

4-8 SUMMARY REPORT

Contractors must furnish the KSC Safety Office with a monthly safety summary report. This includes:

a. Accident/Injury Report, including:

(1) No. accidents
(2) Days lost time
(3) No. manhours worked
(4) Monthly frequency
(5) Calendar year frequency

b. Motor Vehicle Accidents, including:

(1) No. accidents
(2) No. miles driven
(3) Monthly frequency
(4) Calendar year frequency

4-9 APPENDIXES AND ATTACHMENTS

Appendixes and attachments may be used as required by the contractor.