

U.S. Department of Energy

Washington, D.C.

ORDER

DOE 5610.3

12-18-80

SUBJECT: PROGRAM TO PREVENT ACCIDENTAL OR UNAUTHORIZED NUCLEAR EXPLOSIVE
DETONATIONS

1. PURPOSE. To establish the Department of Energy (DOE) program to prevent accidental or unauthorized nuclear explosive detonations, and to define responsibilities for DOE participation in the Department of Defense program for nuclear weapon and nuclear weapon system safety.
2. SCOPE. The provisions of this Order apply to Headquarters, the Albuquerque, Nevada, and San Francisco Operations Offices, including their area offices, and the DOE contractors who participate in the program to prevent accidental or unauthorized nuclear explosive detonations and in the Department of Defense program for nuclear weapon and nuclear weapon system safety.
3. REFERENCES. Additional documents providing standards and regulations applicable to operations with nuclear explosives are provided in Chapter XI.
4. DEFINITIONS. Definitions and terms for the purpose of this Order are provided in Chapter I.
5. POLICY. The DOE maintains a continuing program to assure safety in all nuclear explosive operations for which it has responsibility. The DOE discharges its responsibilities by establishing safety policies and procedures applicable to activities involving nuclear explosives and by assuring itself through all available means that these policies and procedures are effectively followed by its contractors. DOE contractors are responsible for performing their work in accordance with DOE policies and procedures.
6. OBJECTIVE. The objective of this program is to prevent the accidental or unauthorized prearming, arming, launching, firing, releasing, or detonation (high explosive or nuclear) of, and unauthorized access to, nuclear explosives involved in operations conducted or sponsored by the DOE and to assure accomplishment of DOE responsibilities for the resolution of safety matters associated with nuclear weapons transferred to the custody of the Department of Defense. The environmental safety aspects of planned nuclear explosive tests on DOE facilities are administered by the Nevada Operations Office under the Containment Evaluation Panel Charter of 1-77. Those safety aspects associated with the release or dispersion of radioactive material as a result of an unauthorized or accidental high explosive or nuclear explosive detonation are delineated in DOE 5480.1, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION PROGRAM FOR DEPARTMENT OF ENERGY OPERATIONS, and the DOE Emergency Preparedness, Planning, and Response Program.

DISTRIBUTION:

All Departmental Elements
Federal Energy Regulatory Commission (info)

INITIATED BY:

Office of Military Application

7. RESPONSIBILITIES AND AUTHORITIES.

- a. The Under Secretary approves the Program to Prevent Accidental or Unauthorized Nuclear Explosive Detonations and assures the accomplishment of DOE responsibilities in the resolution of safety matters associated with nuclear weapons transferred to the custody of the Department of Defense.
- b. The Assistant Secretary for Defense Programs.
 - (1) Is responsible to the Secretary of Energy for the safe conduct of the nuclear explosives program.
 - (2) Is responsible to the Secretary of Energy for providing DOE final coordination in Department of Defense proposed nuclear weapon system safety rules.
- c. The Director of Military Application.
 - (1) Provides overall management direction for the program and develops and establishes procedures for implementing the policies and objectives of the program.
 - (2) Conducts an annual Headquarters appraisal of each operations office participating in the program to assure compliance with the provisions of this Order.
 - (3) Conducts periodic visits to the field to monitor the operations of various organizations within the scope of this Order.
 - (4) Provides overall management direction for participation in the Department of Defense program for nuclear weapon and nuclear weapon system safety.
- d. The Director of Operational and Environmental Safety provides a staff member to the Headquarters appraisal team (see subparagraph c(2), above).
- e. The Director of Safeguards and Security.
 - (1) Advises the Director of Military Application as to the adequacy of DOE and contractor security programs for facilities and operations subject to the provisions of this Order.
 - (2) Provides the Director of Military Application copies of security inspection and appraisal reports as they pertain to DOE and DOE contractor facilities and operations subject to the provisions of this Order.
- f. The Managers of the Albuquerque, Nevada, and San Francisco Operations Offices, implement the provisions of this Order in their areas of responsibility as follows:

- (1) Assure that responsibilities and authorities are clearly defined and delegated at all appropriate management and supervisory levels.
- (2) Assure that prior to the beginning of any operation involving a nuclear explosive, or an assembly which is a potential nuclear explosive, a nuclear safety study group or safety survey group has completed its review of the operation, the report has been approved, and appropriate action has been taken on the recommendations.
- (3) Schedule and assure the conduct of timely nuclear safety studies and safety surveys.
- (4) Appoint the chairpersons for nuclear safety study groups and safety survey groups which they schedule.
- (5) Assure that competent DOE and contractor staff personnel serve as members of or technical advisors to the nuclear safety study groups and safety survey groups.
- (6) Assure that each nuclear safety study group and safety survey group has available for evaluation the technical data, safety analysis, operational concepts and descriptions, proposed safety rules, emergency procedures, security procedures, and pertinent approved safety studies applicable to nuclear safety for the operation under consideration.
- (7) Take appropriate action on the recommendations, safety rules, and emergency procedures proposed by each of the nuclear safety study groups and safety survey groups and approve the reports of these groups prior to the commencement of the operation to which they pertain.
- (8) Assures that nuclear safety study group and safety survey group recommendations, safety rules, and emergency procedures which have been approved are being effectively implemented.
- (9) Implement the personnel assurance program set forth in Chapter II.
- (10) Assure that DOE and contractor employees are trained and certified to perform their duties in accordance with the training program established in Chapter III.
- (11) Assure implementation of the two-person concept for operations set forth in Chapter IV.
- (12) Assure compliance with the general nuclear safety rules set forth in Chapter V, and develop specific safety rules to supplement the general nuclear safety rules for specific operations with nuclear explosives, to address specific characteristics of an individual design of a nuclear explosive, a specific test, or operation.

- (13) Implement the nuclear safety study and nuclear safety survey program set forth in Chapter VI.
- (14) Establish a program for electrical tester certification and control as set forth in Chapter VII.
- (15) Establish and conduct a nuclear explosive occurrence reporting, analysis, and information dissemination program set forth in Chapter VIII.
- (16) Submit a monthly report to the Director of Military Application summarizing activities conducted in support of this Order. The report for the last month of each quarter will include a schedule of activities for the next quarter.

g. The Manager, Albuquerque Operations Office, in addition to responsibilities and authorities in paragraph 7f:

- (1) Is responsible for all operational aspects of the program except those operations which take place within the Nevada Test Site, the supplemental test sites, and other locations designated as experiment or project sites involving the planned nuclear detonation of a nuclear explosive. Such operations include the assembly, disassembly, handling, storage, and transportation of nuclear explosives.
- (2) Assists the Director of Military Application in the administration of DOE's participation in the Department of Defense program for nuclear weapon and nuclear weapon system safety and participates in the military service's safety studies and reviews as set forth in Chapter IX.
- (3) Monitors and conducts annual appraisals of area offices and contractor operations, over which he exercises contract administration jurisdiction (except for contractor operations at Nevada Test Site), in order to assure compliance with the provisions of Chapter X.

h. The Manager, Nevada Operations Office, in addition to responsibilities and authorities in paragraph 7f:

- (1) Is responsible for all aspects of the nuclear explosive test activities including TWEEZER or similar activities which take place within the Nevada Test Site, the supplemental test sites, and other locations designated as experiment or project sites involving the planned detonation of a nuclear explosive. Such operations include the assembly, disassembly, handling, storage, transportation, preparation for testing, and the conduct of nuclear explosive tests.
- (2) Assures the Director of Military Application that a proposed nuclear explosive test operation will be conducted in compliance with the

provisions of this Order; that all nuclear safety studies and safety surveys have been completed and approved; and that all approved nuclear safety rules and emergency procedures will be complied with prior to the granting of permission to fire (detonate).

- (3) Monitors and conducts annual appraisals of contractor operations at the Nevada Test Site, supplemental test sites, and other locations in order to assure compliance with the provisions of Chapter X.
- i. The Manager, San Francisco Operations Office, in addition to responsibilities and authorities in paragraph 7f, monitors and conducts annual appraisals of contractor operations, over which he exercises contract administration jurisdiction (except for contractor operations at the Nevada Test Site), in order to assure compliance with the provisions of this Order, as set forth in Chapter X.

A large, stylized handwritten signature in black ink, which appears to read "Lynn R. Coleman".

Lynn R. Coleman
Acting Deputy Secretary

TABLE OF CONTENTSCHAPTER I - DEFINITIONS OF TERMS

- | | |
|---------------------|-----|
| 1. General..... | I-1 |
| 2. Definitions..... | I-1 |

CHAPTER II - PERSONNEL ASSURANCE PROGRAM

- | | |
|--|------|
| 1. General..... | II-1 |
| 2. Requirements..... | II-1 |
| 3. Personnel Assurance Program for Employees..... | II-2 |
| 4. Personnel Assurance Program for Contractor Employees..... | II-3 |
| 5. Certification Review Procedures..... | II-5 |
| 6. Termination of Personnel Assurance Program Certification
Processing or Review..... | II-9 |
| 7. Personnel Assurance Program Certification Lists..... | II-9 |

CHAPTER III - TRAINING AND QUALIFYING OF DOE AND CONTRACTOR
EMPLOYEES

- | | |
|--------------------------|-------|
| 1. General..... | III-1 |
| 2. Requirements..... | III-1 |
| 3. Responsibilities..... | III-2 |

CHAPTER IV - TWO-PERSON CONCEPT FOR OPERATIONS

- | | |
|----------------------------|------|
| 1. General..... | IV-1 |
| 2. Applicability..... | IV-1 |
| 3. Two-Person Concept..... | IV-1 |
| 4. No-Lone Zone..... | IV-1 |
| 5. Implementation..... | IV-1 |

CHAPTER V - ESTABLISHMENT OF GENERAL NUCLEAR SAFETY RULES

- | | |
|--------------------------------------|-----|
| 1. General..... | V-1 |
| 2. General Nuclear Safety Rules..... | V-1 |

CHAPTER VI - NUCLEAR EXPLOSIVE SAFETY STUDY AND NUCLEAR
EXPLOSIVE SAFETY SURVEY PROGRAM

- | | |
|--|------|
| 1. General..... | VI-1 |
| 2. Nuclear Explosive Safety Standards..... | VI-1 |
| 3. Requirements..... | VI-1 |
| 4. Nuclear Safety Study Groups..... | VI-2 |
| 5. Nuclear Safety Survey Groups..... | VI-5 |

12-18-80

CHAPTER VII - ELECTRICAL TESTER CONTROL PROGRAM

1. General..... VII-1
2. Implementation..... VII-1

CHAPTER VIII - NUCLEAR EXPLOSIVE OCCURRENCE REPORTING,
ANALYSIS, AND INFORMATION DISSEMINATION
PROGRAM

1. General..... VIII-1
2. Applicability..... VIII-1
3. Scope..... VIII-1
4. Implementation..... VIII-2

CHAPTER IX - RESPONSIBILITIES AND PROCEDURES FOR PARTICIPATION
IN THE DEPARTMENT OF DEFENSE PROGRAM FOR NUCLEAR
WEAPON AND NUCLEAR WEAPON SYSTEM SAFETY

1. General..... IX-1
2. Administration..... IX-1
3. Participation in Department of Defense Safety Studies and
Reviews..... IX-1
4. Review and Approval Procedures for Department of Defense
Proposed Nuclear Weapon System Safety Rules..... IX-1
5. Procedure for Processing Proposed Administrative Change to
Approved Department of Defense Nuclear Weapon System
Safety Rules..... IX-4
6. Field Review..... IX-5

CHAPTER X - MONITOR AND APPRAISAL PROGRAM

1. General..... X-1
2. Requirements..... X-1
3. Implementation..... X-1
 - Attachment 1 - Appraisal Guide..... X-3
 - Attachment 2 - Appraisal Report Format..... X-8

CHAPTER XI - REFERENCES

1. General..... XI-1
2. DOE-Department of Defense Joint Atomic Weapon Publications..... XI-1
3. Other Publications..... XI-2

CHAPTER I

DEFINITIONS OF TERMS

1. GENERAL. The definitions provided are for the purpose of defining the use and meaning of words and terms as they apply to the provisions of this Order.
2. DEFINITIONS.
 - a. Access. That proximity to a nuclear explosive which affords a person the opportunity to tamper with or activate a critical component.
 - b. Accidental, Inadvertent Actions. Occurrences wherein the high explosive, the nuclear system, or the arming and firing system operates in response to a malfunction, an act of God, or to human error.
 - c. Activate. The actuation of a device or devices to a position or positions which would permit the passage of prearming, arming, fuzing, or firing signals.
 - d. Arming. The placing of a nuclear explosive in a configuration such that a single signal will initiate the action required to obtain a nuclear detonation.
 - e. Atomic Weapon. See Nuclear Explosive.
 - f. Critical Assembly. A nuclear explosive. (NOTE: This definition is for use by the nuclear explosive assembly facilities.)
 - g. Critical Assembly Area. An area which contains complete or partially assembled nuclear explosives.
 - h. Critical Components. The components of a nuclear explosive which control the prearming, arming, fuzing, firing, or releasing and which, if activated or bypassed, could cause or contribute to a nuclear detonation.
 - i. Critical Duties. Duties which require a DOE or contractor employee to perform work which affords both technical knowledge of and access to nuclear explosive sufficient to enable the individual to cause a detonation (high explosive or nuclear).
 - j. Custody. Responsibility for the control, transfer, movement, and access to nuclear explosives and components. Custody includes the maintenance of accountability for nuclear explosives and components.
 - k. High Explosive Detonation. The detonation or deflagration of the high explosive or propellant within the nuclear explosive.

- l. No-Lone Zone. An area in which the two-person concept for operations shall apply.
- m. Nuclear Detonation. An energy release through a nuclear process, during a period of time on the order of one microsecond, in an amount equivalent to the energy release by the detonation of 4 or more pounds of TNT.
- n. Nuclear Explosive. Any assembly or subassembly containing fissionable or fusionable materials and high explosive or propellants capable of producing a nuclear detonation. (NOTE: Included in the definition are nuclear weapons or devices utilizing nuclear energy, the principal purpose of which is for use as or for the development of an explosive device, an explosive device prototype, or an explosive test device.)
- o. Nuclear Explosive Occurrence. Any inadvertent or unauthorized occurrence involving a nuclear explosive which constitutes an actual or potential degradation of nuclear explosive safety.
- p. Nuclear Explosive Safety. Protection against accidental or unauthorized action involving nuclear explosives which may result in detonation (high explosive or nuclear). All references to safety in this Order pertain to nuclear explosive safety.
- q. Nuclear Explosive Safety Rules. Safety rules are approved administrative and operational procedural requirements developed to govern operations with nuclear explosives. There are two classes of nuclear explosive safety rules:
 - (1) General Safety Rules. Approved administrative and operational procedures which have a continuing application for operations with nuclear explosives. Included are basic safety directives.
 - (2) Specific Safety Rules. Approved administrative and operational procedures which have been developed to supplement general safety rules and to address specific characteristics of an individual design of a nuclear explosive, specific test, or operation.
- r. One-Point Safe Nuclear Explosives. Those nuclear explosives which in the event of a detonation initiated at any one point in the high explosive system present no greater probability than 1 in 10^6 of achieving a nuclear detonation.
- s. Operations. Activities concerned with the assembly, disassembly, handling, maintenance, repair, modification, quality evaluation, storage, transportation, testing, planned nuclear or nonnuclear detonations (up to detonation), and retirement of nuclear explosives.

- t. Personnel Assurance Program. A program that establishes the requirements and responsibilities for screening, selecting, and continuously evaluating employees being considered for assignment or assigned to critical duties.
- u. Personnel Assurance Program Certification. The certification by a manager of an operations office that an employee meets the prescribed standards and is suitable for assignment to critical duties.
- v. Positive Measures. Such measures as administrative controls, safety rules, procedures, and directives, as well as physical, electrical, and mechanical restraints to prevent accidental or unauthorized detonations (high explosive or nuclear) of a nuclear explosive.
- w. Preaming. The operation whereby the explosive initiation system of a nuclear explosive is connected to a power source in such a manner that with proper arming, firing, or release signals, the nuclear explosive will be detonated.
- x. Quality Evaluation. A continuing program of evaluation to determine whether nuclear explosives and components are of satisfactory quality, to determine the degree of conformance to design intent, and to determine the status of stockpile functionability by means of periodic examination and test of randomly selected nuclear explosives and components.
- y. Suitable. Possessing the emotional and mental stability and physical capability necessary to perform critical duties without causing an accidental or unauthorized detonation (high explosive or nuclear).
- z. Two-Person Concept. A concept which requires a minimum of two authorized persons, each capable of detecting incorrect or unauthorized operations with respect to the task to be performed and familiar with pertinent safety and security requirements, to be present during all operations that afford access.

~

~

)

.

.

)

)

12-18-80

CHAPTER IIPERSONNEL ASSURANCE PROGRAM1. GENERAL.

- a. The personnel assurance program is designed to provide management guidance in the selection of individuals for assignment to critical duties. Individuals selected for assignment to critical duties must be certified by the DOE as suitable for such assignment in accordance with the procedures and requirements set forth in this chapter. Personnel assurance program certification for assignment to critical duties is in addition to meeting all other applicable qualification standards. The provisions of the personnel assurance program shall not be used in rendering security clearance determinations.
- b. Failure of an individual to be certified for assignment to critical duties does not in itself reflect on the individual's suitability for assignment to other duties and is not in itself a cause for punitive measures or adverse reflection on the individual. Personnel management actions based on the consideration of technical competence and other job qualification requirements, not related to the requirements of the personnel assurance program, are not affected by the requirements of this chapter.
- c. Managers assigned personnel assurance program functions may delegate to designated members of their respective organizations authority to perform personnel assurance program functions as deemed appropriate except for those functions set forth in paragraphs 3a(6), 3a(7), 3a(8), 4b(3), 4b(4), 4b(5), and 5 of this chapter.

2. REQUIREMENTS. DOE or contractor employees to be assigned critical duties must be certified by DOE, in accordance with the procedures set forth in this chapter, as suitable for such assignment. The criteria to be used for such certifications are contained in the definition of "suitable" in Chapter I. In addition to meeting the criteria of suitability, employees to be so certified shall be required to:

- a. Have a valid DOE "Q" clearance.
- b. Express a willingness to work with nuclear explosives.
- c. Prior to initial certification but after suitability has been determined, have been provided the interview and briefing described in paragraphs 3a(2) and 4a(2) of this chapter.
- d. Undergo a medical evaluation prior to initial certification.
- e. Undergo an annual medical evaluation for recertification.

- f. When directed by the cognizant operations or area office manager, undergo a medical evaluation of suitability to maintain a certification in cases where suitability of an employee who has been certified is subsequently questioned. (NOTE: When it has been determined by the cognizant manager that suitability cannot be determined without a psychiatric evaluation, the medical evaluation of suitability may include an evaluation by a psychiatrist(s) certified as a specialist(s) by the American Board of Neurology and Psychiatry.)

3. PERSONNEL ASSURANCE PROGRAM FOR DOE EMPLOYEES.

- a. Managers exercising jurisdiction over personnel assignments to critical duties shall establish procedures for:
- (1) Providing instruction to supervisory personnel, medical personnel, and other appropriate personnel in the nature and objective of the personnel assurance program.
 - (2) Interviewing each employee to be assigned such duties. The interview will include a briefing on the importance of the assignment and the nature and objective of the personnel assurance program.
 - (3) Assuring that employees to be certified and employees certified for assignment to critical duties undergo the required medical evaluations.
 - (4) Reviewing the personnel clearance investigative file, the results of the medical evaluation and the interview, and other available personnel data for each individual being considered for assignment to such duties.
 - (5) Certifying each individual determined to be suitable for critical duty assignment.
 - (6) Reviewing the circumstances of immediate temporary removal of an employee from critical duties on the basis of personnel assurance program considerations.
 - (7) Accomplishing the following if, after reviewing the circumstances of the immediate temporary removal of an employee from critical duties, the manager concurs in such action:
 - (a) Suspend the employee's certification.
 - (b) If necessary, direct that the employee undergo a medical evaluation of suitability for assignment to critical duties. If appropriate, a psychiatric evaluation may also be included.
 - (c) Determine whether the employee's certification should be reinstated or revoked, using the results of the medical and

psychiatric evaluations, if any, and all other pertinent data. (NOTE: Immediate temporary removal actions will not in themselves be cause for loss of pay or other benefits or other changes in employment status.)

- (8) Complying with the review procedures established in paragraph 5, below, prior to a decision either not to certify or to revoke the certification of an employee because the individual is not suitable for assignment to critical duties.
- b. Supervisory personnel whose duties include the supervision of employees performing critical duties shall:
 - (1) Perform day-to-day observation of such employees in terms of suitability for continued assignment to critical duties.
 - (2) Effect immediate temporary removal from critical duties of an employee whose suitability for assignment to critical duties is in question.
 - (3) Immediately inform the cognizant manager of any immediate temporary removal action and the reasons therefor. NOTE: Immediate temporary removal from critical duties requires as a minimum that:
 - (a) The employee be instructed to cease performance of critical duties.
 - (b) The employee be escorted from, and prevented from entering or reentering, any area which would afford the individual access to nuclear explosives.
 - (c) The employee's critical duty badge or other similar identification be confiscated pending resolution of the matter. (NOTE: Immediate temporary removal from critical duties does not constitute a determination that the removed employee lacks the necessary emotional or mental stability or physical capability to perform critical duties properly. Such removal does indicate, however, that there is a question as to the employee's suitability which warrants the temporary removal from critical duties pending resolution of the question.)
4. PERSONNEL ASSURANCE PROGRAM FOR CONTRACTOR EMPLOYEES. Managers of operations offices exercising administrative jurisdiction over contractors whose scope of work includes duties subject to the provisions of the personnel assurance program shall:
 - a. Promulgate instructions for implementing the requirements of the personnel assurance program within contractor facilities. As a minimum, the manager's instructions shall provide for the contractor to establish procedures for:

12-18-80

- (1) Instructing supervisory personnel, medical personnel, and other appropriate personnel in the nature and objective of the personnel assurance program.
- (2) Interviewing each employee being considered for assignment to critical duties after the contractor has determined, on the basis of all information available to it, that the employee is suitable. The interview will include a briefing on the importance of the assignment and the nature and objective of the personnel assurance program.
- (3) Assuring that employees to be certified and employees certified for assignment to critical duties undergo the required medical evaluations.
- (4) Requesting certification and recertification of contractor employees when the contractor has determined, on the basis of all information available to it, that an employee is suitable. When requesting certification or recertification, the contractor will provide the cognizant manager with personnel data, results of the medical evaluation and the interview, and any other data for review that may have a bearing on an employee's certification or recertification.
- (5) Daily observation of factors which may bear on an employee's suitability for continued assignment to critical duties by contractor supervisory personnel.
- (6) The immediate temporary removal of any employee from critical duties whose suitability for such assignment is in question.
- (7) Immediately informing the cognizant manager of operations of any immediate temporary removal action and the reasons therefor.
NOTE: Immediate temporary actions will not in themselves be cause for loss of pay or other benefits or other changes in employment status. Immediate temporary removal from critical duties requires as a minimum that:
 - (a) The employee be instructed to cease performance of critical duties.
 - (b) The employee be escorted from and prevented from entering or reentering any area which would afford the individual access to nuclear explosives.
 - (c) The employee's critical duty badge or other similar identification be confiscated pending resolution of the matter. NOTE: Immediate temporary removal from critical duties does not constitute a determination that the removed employee lacks the necessary emotional or mental stability or physical capability to perform critical duties properly.

12-18-80

Such removal does indicate, however, that there is a question as to the employee's suitability which warrants the temporary removal from critical duties pending resolution of the question.)

b. Establish procedures for the manager's:

- (1) Review of a contractor's request for certification or recertification of an employee for assignment to critical duties. The review will include a review of the employee's personnel clearance investigative file, the medical evaluation, the results of the interview, and other available personnel data. This review may be delegated to area office managers.
- (2) Certification and recertification of each contractor employee determined to be suitable for critical duty assignment. Area office managers may be delegated certification authority.
- (3) Review of the circumstances concerning the immediate temporary removal of an employee from critical duties on the basis of personnel assurance program considerations.
- (4) Accomplishment of the following actions if, after reviewing the circumstances surrounding the temporary removal of an employee from critical duties, the manager concurs in such action:
 - (a) If necessary, direct that the employee undergo a medical evaluation of suitability for assignment to critical duties. If appropriate, a psychiatric evaluation may be included.
 - (b) Determine whether the employee's certification should be reinstated or revoked, using the results of the medical and psychiatric evaluations, if any, or other pertinent data.
- (5) Complying with the review procedures established in paragraph 5. prior to a decision either not to certify or to revoke the certification of an employee because the individual is not suitable for assignment to critical duties.

5. CERTIFICATION REVIEW PROCEDURES.

- a. The manager of the operations office, prior to rendering a decision not to certify or to revoke the personnel assurance program certification of a DOE or contractor employee because the individual is not suitable for assignment to critical duties, shall notify the employee in writing:
 - (1) In detail, of all the specific information which raises the question as to suitability.
 - (2) That the individual may comment to the manager on the information within 20 working days of receipt of the notification in writing under oath or affirmation.

- (3) That the individual may indicate to the manager in writing, within 20 working days of receipt of the notification, that the individual wishes to appear in person before a certification review board for a review of the information giving rise to the question as to the individual's suitability.
 - (4) That the individual may be represented by counsel of the individual's own choosing at the review conducted by the board.
 - (5) That the individual may offer information in the individual's own behalf in support of the individual's claim for suitability for personnel assurance program certification or recertification through witnesses and documents.
 - (6) That, in the event the individual fails to request a review, a final decision as to suitability shall be based upon available information.
- b. The manager of the operations office, upon receipt of a request from the employee to appear in person for review of the information giving rise to the question as to the individual's suitability for assignment to critical duties, shall forthwith appoint an impartial three-person certification review board. The board shall be chaired by an attorney and shall include as members a person familiar with the general field of work of the employee and, if medical issues are involved, a medical doctor experienced in the relevant medical area. All board members shall have a DOE "Q" clearance. The manager will also appoint a DOE attorney as counsel to the board who will assist the board in obtaining all the evidence bearing on the matter. Counsel will arrange for the appearance of witnesses and will examine and cross-examine witnesses. Counsel will take no part in the deliberations of the board and will express no opinion to the board on the merits.
- c. The certification review board shall:
- (1) Notify the employee in writing, at least 7 working days in advance, of the scheduled place, date, and hour where the review will take place.
 - (2) Conduct the review in an orderly and impartial manner and in accordance with applicable security requirements, with every effort made to protect the interests of the Government and the employee.
 - (3) Present to the employee, through witnesses or documentation, all information which gives rise to the question of the individual's suitability for assignment to critical duties.
 - (4) Assure that the employee is given full opportunity during the review to refute or mitigate the information which raises the

12-18-80

question as to the individual's suitability. The employee shall be permitted to offer information in the individual's own behalf, to call, confront, examine, and cross-examine witnesses and other persons who have made written or oral statements, and to present and examine evidence. The board may receive and consider an oral or written statement adverse to the employee relating to a controverted issue without affording the employee the opportunity to cross-examine the person making the statement in either of the following circumstances:

- (a) The substance of the statement was contained in the employee's personnel clearance investigative file before the question as to the individual's suitability arose, and the head of the Federal department or agency supplying the statement certifies that the person who furnished the information is a confidential informant who has been engaged in obtaining intelligence information for the Government and the disclosure of the individual's identity would be substantially harmful to the national interest.
- (b) The substance of the statement was contained in the employee's personnel clearance investigative file before the question as to the individual's suitability arose; and the Under Secretary or his special designee for that particular purpose has preliminarily determined, after considering information furnished by the investigative agency as to the reliability of the person and the accuracy of the statement concerned, that the statement concerned appears to be reliable and material; and the Under Secretary or such special designee has determined that failure of the board to receive and consider such statement would be substantially harmful to the national security and that the person who furnished the information cannot appear to testify 1 due to death, severe illness, or similar cause, in which case the identity of the person and the information to be considered shall be made available to the employee, or 2 due to some other cause determined by the Under Secretary to be good and sufficient. Whenever procedures under 1 or 2 above are used, the employee shall be given a summary of the information which shall be as comprehensive and detailed as the national security permits and appropriate consideration shall be accorded to the fact that the employee did not have an opportunity to cross-examine such person. (NOTE: At its discretion, the Board may request the manager to arrange for the issuance of subpoenas for witnesses, including those for witnesses who will appear on behalf of the employee. Testimony of the employee and of all witnesses shall be given under oath or affirmation. When procedures under paragraphs 5c(4)(a), or 5c(4)(b) are utilized, the manager will obtain the necessary certification(s) or determination(s).)
- (5) Record the review proceedings and forward a copy of the record to the manager.

12-18-80

- (6) Make specific written findings and a written recommendation, based upon the record, and forward it, together with a statement of the reasons therefor, to the manager.
- d. The manager of the operations office shall, in the event the employee fails to request a board review or subsequent to receipt of the board's submissions, promptly render a decision in the matter. If the manager decides not to certify or to revoke the personnel assurance program certification of a DOE or contractor employee because the individual is not suitable for assignment to critical duties, the manager shall:
- (1) Inform the employee in writing of the decision not to grant, or the decision to revoke, the individual's certification and the specific reasons therefor.
 - (2) In addition, where there has been a board review, forward a copy of the record of the review proceedings and of the board's recommendation and statement of the reasons therefor to the employee, and inform the employee in writing:
 - (a) That the individual may have the decision reviewed by the Assistant Secretary for Defense Programs and may present the individual's position in writing to the Assistant Secretary for Defense Programs, provided the individual requests such a review and presentation in writing through the manager within 20 working days of the individual's receipt of the manager's decision.
 - (b) That, if within 20 working days of receipt of the manager's decision the individual does not request a review of the decision by the Assistant Secretary for Defense Programs, the manager's decision not to grant or to revoke certification shall be final.
- e. The manager of the operations office receiving a request for review by the Assistant Secretary for Defense Programs of a decision not to grant or to revoke a personnel assurance program certification shall forward to the Assistant Secretary for Defense Programs:
- (1) The employee's request for a review by the Assistant Secretary for Defense Programs of the decision.
 - (2) A copy of the decision and the specific reasons therefor.
 - (3) The employee's written position concerning the decision.
 - (4) A copy of the record of the review proceedings and of the board's recommendation and statement of the reasons therefor.
- f. The Assistant Secretary for Defense Programs, upon receipt of an employee's request to review the decision not to grant or to revoke

the individual's personnel assurance program certification, shall review all information forwarded by the manager of the operations office and render a determination in support of the manager's decision or grant or reinstate the employee's certification.

6. TERMINATION OF PERSONNEL ASSURANCE PROGRAM CERTIFICATION PROCESSING OR REVIEW. If, for reasons not involving personnel assurance program considerations, an employee is no longer being considered for assignment to critical duties or is no longer assigned to such duties, any processing of a decision with respect to the employee's certification pursuant to this chapter shall, at the employee's option, either be terminated without a final determination or pursued to final determination. If, at a later date, an employee who chose not to have a final determination should again be considered for assignment to critical duties, processing of the individual's certification pursuant to this chapter shall be commenced anew.
7. PERSONNEL ASSURANCE PROGRAM CERTIFICATION LISTS.
 - a. Managers of operations offices granting personnel assurance program certifications within the provisions of this chapter will establish procedures for developing and maintaining a current list of DOE and contractor employees certified in accordance with the provisions of this chapter. As a minimum, the procedures shall provide for:
 - (1) The prompt addition of employee names granted certification.
 - (2) The prompt removal of employee names whose certifications have been revoked.
 - (3) A quarterly review of the list to assure it is current.
 - (4) The removal of employee names no longer assigned to critical duties.
 - b. The purpose of personnel assurance certification lists is to provide an up-to-date ready reference of DOE and contractor employees certified in accordance with the provisions of the personnel assurance program. The lists will not be used to increase employee stature.
 - c. The number of DOE and contractor employees included on the personnel assurance program certification lists will be kept to a minimum consistent with operating and administrative requirements.

CHAPTER III

TRAINING AND QUALIFYING OF DOE AND CONTRACTOR EMPLOYEES

1. GENERAL. This chapter establishes the requirements of a program for training and qualifying DOE and contractor employees for assignment to critical duties and for training in procedures and plans to assure orderly action during an emergency involving nuclear explosives. The technical and operational training requirements established by this chapter may be satisfied by a program of classroom instruction or, where it is considered more appropriate, a program of on-the-job training may be employed.
2. REQUIREMENTS.
 - a. Critical Duty Training Program.
 - (1) A program shall be developed and maintained to provide the special training required to qualify DOE and contractor employees for assignment to critical duties. As a minimum, the special training program shall include:
 - (a) The purpose, policies, and requirements of the personnel assurance program.
 - (b) The objective of the personnel assurance program.
 - (c) The purpose and objective of the two-person concept for operations.
 - (d) Training in the necessary information required to provide an understanding of the critical duty assignment.
 - (e) Training in the operational procedures to be performed.
 - (f) Training in the proper employment of test equipment associated with the assignment.
 - (g) Training in safety programs associated with the assignment.
 - (h) Training in emergency procedures associated with the assignment.
 - (i) Provisions to assure critical duty qualified employees remain proficient in the critical duties for which they are qualified.
 - (j) Provisions for requalification in appropriate safety and emergency procedures.
 - (2) Individual records will be maintained for each employee trained and qualified for critical duty assignment. The record shall set

forth the training received, acquired technical qualifications, and qualification for a specific critical duty assignment. The training records shall be clearly auditable by the DOE.

b. Emergency Training.

- (1) A program shall be developed and maintained to provide training for a cadre of employees at DOE and contractor facilities, including test sites, to assure planned and orderly action during an emergency. As a minimum, the program shall:
 - (a) Provide for an organization of fully qualified personnel to be responsible for emergency operations.
 - (b) Be a continuing program to provide for qualified replacement personnel.
 - (c) Provide for retraining of qualified personnel to assure they remain proficient in all areas in which they have responsibility.
 - (d) Provide for instruction in the following areas:
 - 1 Emergency plans, emergency procedures, and security procedures.
 - 2 Control of access to no-lone zones and other limited or controlled access areas.
 - 3 Use of protective clothing and emergency equipment.
 - (e) Provide for periodic training exercises and instruction periods. During exercise and instruction periods, place emphasis on those areas not frequently used in day-to-day operations but which are essential to safe operations with nuclear explosives.
- (2) Individual records of the qualifications, experience, training, and retraining of each member of the organization shall be maintained and be clearly auditable by the DOE.

3. RESPONSIBILITIES. Managers responsible for operations subject to the provisions of this Order shall:

- a. Establish training programs, as appropriate, in order to carry out their respective responsibilities within the provisions of this chapter.
- b. Assure that the training programs include provisions for reviewing program requirements and for updating the programs in order to reflect changes in plans and procedures.
- c. Establish procedures for periodically reviewing the training records.

CHAPTER IV

TWO-PERSON CONCEPT FOR OPERATIONS

1. GENERAL. This chapter prescribes requirements and provides information to establish the proper perspective for interpretation and compliance with the two-person concept for operations with nuclear explosives and to assure that operations with nuclear explosives are conducted safely. The two-person concept is but one of the procedures implemented to enhance nuclear safety and to prevent an accidental or an unauthorized action with regard to a nuclear explosive.
2. APPLICABILITY. The two-person concept applies to all operations conducted or sponsored by the DOE that involve nuclear explosives.
3. TWO-PERSON CONCEPT. The two-person concept for operations requires that a minimum of two authorized persons, each capable of detecting incorrect or unauthorized operations with respect to the task to be performed and familiar with pertinent safety and security requirements, be present during all operations which afford access to any portion of a nuclear explosive that could permit prearming, arming, launching, firing, releasing, or detonating (high explosive or nuclear) of a nuclear explosive.
4. NO-LONE ZONE. A no-lone zone is a designated area which contains a nuclear explosive or the subassemblies thereof or any other designated area from which a lone individual is denied access; that is, a zone or area where the two-person concept for operations is enforced. The boundaries of a no-lone zone or area are determined after consideration is given for the operation to be performed, the size and amount of material to be handled, the size and amount of equipment required, and the physical layout of the facility where the operation is to be accomplished.
5. IMPLEMENTATION. Managers of the operations offices responsible for operations with nuclear explosives shall establish procedures for implementing the two-person rule concept for operations and the establishment of no-lone zones.

3

3

3

.

.

3

3

CHAPTER V

ESTABLISHMENT OF GENERAL NUCLEAR SAFETY RULES

1. GENERAL.

- a. The general nuclear safety rules set forth in this chapter are mandatory for all operations conducted or sponsored by the DOE with nuclear explosives. Implementation of these safety rules is expected to take different forms due to the many diverse operations performed in the DOE's nuclear explosive development, test, and production complex. Practices and procedures shall be such as to assure compliance with these safety rules. If upon completion of a nuclear safety study it is deemed operationally necessary to deviate from a requirement set forth by the general nuclear safety rules, a request for permission to deviate from an established requirement shall be forwarded by appropriate channels to the Assistant Secretary for Defense Programs for approval. Compliance shall be adjudged by monitoring and during nuclear safety studies, surveys, and appraisals.
- b. Managers responsible for operations conducted or sponsored by the DOE shall develop specific safety rules to supplement the general safety rules for specific operations with nuclear explosives or to address specific characteristics of an individual design of a nuclear explosive, a specific test, or operation.

2. GENERAL NUCLEAR SAFETY RULES.

- a. All operations involving nuclear explosives shall be governed by approved nuclear safety rules and safety procedures.
- b. Nuclear safety rules shall be developed to assure the safe conduct of all operations with nuclear explosives.
- c. Nuclear safety rules shall have as their objective compliance with the four standards of safety listed in Chapter VI.
- d. All operations involving nuclear explosives and associated systems shall be in accordance with approved written procedures, checklists, or drawings.
- e. The two-person concept for operations shall apply during all operations which afford access.
- f. At least one designated individual capable of determining appropriate emergency procedures for accidents or incidents involving a nuclear explosive shall be on call for consultation during all phases of operations involving nuclear explosives.
- g. DOE and contractor employees whose duties require the performance of work which affords both the technical knowledge of and access to

nuclear explosives shall be evaluated to determine their suitability for such an assignment.

- h. Only individuals who meet and maintain high standards of reliability, work performance, motivation, mental and emotional stability, and have the physical capacity shall be assigned critical duties.
- i. Prior to the employment of tools, test equipment, handling equipment, and transport equipment for nuclear explosives, there shall be a safety analysis of the equipment to assure that an adequate degree of safety is inherent in their use.
- j. The assembly of nuclear explosives will be performed only at those locations authorized by the Assistant Secretary for Defense Programs.
- k. Operations involving the assembly, disassembly, handling, storage, transportation, testing, and detonating (high explosive or nuclear) of nuclear explosives not known to be one-point safe shall be conducted only at the Nevada Test Site.
- l. Operations with nuclear explosives not known to be one-point safe shall be kept to a minimum consistent with programmatic requirements.

12-18-80

CHAPTER VINUCLEAR EXPLOSIVE SAFETY STUDY AND
NUCLEAR EXPLOSIVE SAFETY SURVEY PROGRAM

1. GENERAL. This chapter establishes responsibilities, procedures, and requirements for the nuclear safety study and nuclear safety survey program.
2. NUCLEAR EXPLOSIVE SAFETY STANDARDS. To assure that all vital areas of concern are considered in the development of nuclear safety rules and procedures for DOE operations, the adequacy of safety rules, procedures, and equipment shall be measured against the following safety standards:
 - a. There shall be positive measures to prevent nuclear explosives involved in accidents or incidents from producing a nuclear detonation. (In addition, a goal of the program is to assure that everything practicable has been done to prevent nuclear explosives involved in accidents or incidents from producing a high explosive detonation.)
 - b. There shall be positive measures to prevent the deliberate unauthorized prearming, arming, launching, firing, releasing, or detonating (high explosive or nuclear) of a nuclear explosive.
 - c. There shall be positive measures to prevent the accidental or inadvertent prearming, arming, launching, firing, releasing, or detonating (high explosive or nuclear) of a nuclear explosive.
 - d. There shall be positive measures to assure adequate security to prevent unauthorized access.
3. REQUIREMENTS.
 - a. Prior to beginning any operation involving a nuclear explosive or an assembly which is a potential nuclear explosive, the manager of the operations office responsible for the proposed operation shall assure that a nuclear safety study or nuclear safety survey is conducted and that appropriate action is taken in accordance with the provisions of this chapter on all recommendations including nuclear safety rules developed by the nuclear safety study.
 - b. For a proposed operation involving a nuclear explosive which is believed to be comparable to a previously studied and approved operation, a nuclear safety survey may determine that the approved study is valid, provided the characteristics of the system which affect safety are essentially unchanged and the approved nuclear safety rules provide adequate nuclear explosive safety.

4. NUCLEAR EXPLOSIVE SAFETY STUDY GROUPS.

a. Organization.

- (1) The manager of the operations office responsible for a proposed operation or test to be studied shall appoint the chairperson thereof.
- (2) The chairperson shall schedule the safety study and request appointment of the additional study group members and advisors by other operations offices, area offices, and DOE contractor organizations.
- (3) The safety study group shall normally include at least one member each from the Albuquerque, Nevada, and San Francisco Operations Offices, and the laboratories (Los Alamos National Scientific Laboratory, Lawrence Livermore National Laboratory, and Sandia National Laboratories), as well as other members or advisors as required by the cognizant manager.
- (4) Upon request of the manager of the operations office responsible for a proposed operation or test, other managers of operations offices shall provide qualified DOE and contractor personnel to participate as members of, or advisors to, safety study groups irrespective of the manager responsible for the operation or test under consideration.
- (5) Safety study group members shall be personnel other than those having immediate design, development, or operational responsibility for the nuclear explosive and the operation or test under consideration.

b. Functions.

- (1) To provide the manager of the operations office responsible for a proposed operation or test with a competent and objective report concerning the nuclear explosive safety of the proposed operation.
- (2) To evaluate all operations associated with nuclear explosives, to identify deficiencies and to determine the action necessary to correct the deficiencies, to evaluate emergency procedures, and to develop safety rules where necessary.
- (3) To assure that all safety rules, equipment, and procedures are evaluated for compliance with the four standards of safety listed in paragraph 2, above.

c. Scope.

- (1) The nuclear safety study group shall consider and evaluate, as appropriate:
 - (a) A description of the operation or test to be performed.
 - (b) All applicable technical data.
 - (c) Potential criticality hazards associated with the operation or test to be performed.
 - (d) A safety analysis of the nuclear explosive.
 - (e) A safety analysis of the nuclear explosive prearming, arming, timing, fuzing, and firing systems and procedures to be employed.
 - (f) A description of the countdown emergency stop and hold capability.
 - (g) An electrical tester description and safety analysis for each tester to be employed with the nuclear explosive.
 - (h) The vulnerability of the nuclear explosive from a security standpoint.
 - (i) Such other information as the safety study group determines necessary.
- (2) The organization responsible for the design of the nuclear explosive and associated systems shall provide a description of the operation, the test, the safety analysis, and other technical data required by the safety study group.

d. Safety Study Group Report.

- (1) The safety study group's formal report shall be provided to the manager of the operations office responsible for the proposed operation or test. The formal report shall include, as appropriate:
 - (a) A description of the operation or test to be performed.
 - (b) A description of the nuclear explosive involved in the operation or test and a statement of the nuclear explosive's one-point-safety characteristics.

12-18-80

- (c) A discussion of criticality hazards and procedures to provide criticality safety margins for the operation or tests to be performed.
 - (d) A discussion of the design safety features of the nuclear explosive.
 - (e) The safety analysis of the nuclear explosive and the operations to be performed.
 - (f) The safety analysis of the prearming, arming, timing, fuzing, firing, and a description of the countdown emergency stop and hold procedures for the operation or test.
 - (g) A listing of approved electrical testers for the operation or test.
 - (h) Specific conclusions, recommendations, proposed safety rules, and proposed emergency procedures for the operation or test.
- (2) In the event a safety study group member or members are not in agreement with any particulars of the report, a minority view shall be appended to the report.

e. Approval Procedures.

- (1) The manager of the operations office responsible for a proposed operation or test studied shall approve or disapprove the report and the recommendations, the proposed safety rules, and the emergency procedures. Acceptance and approval authority for safety study and survey reports, other than nuclear explosive test events, may be redelegated to the assistant manager level.
- (2) Documentation of the manager's action shall be maintained as an integral part of the safety study report. The documentation shall include reasons for disapproving any of the safety study group's recommendations, proposed safety rules, and emergency procedures.
- (3) In the event there are any unresolved issues at the operations office level, the manager concerned shall forward the safety study report to the Director of Military Application for resolution.

f. Continuing Validity of Safety Study Reports.

- (1) Until such time as the safety study report is acted upon by the cognizant manager and until all issues are resolved, the safety study report is advisory in nature.

12-18-80

- (2) An approved safety study report shall remain valid and applicable only so long as all of the characteristics of the nuclear explosive or system studies which affect the safety of the operation remain essentially the same as those considered by the safety study group.
- (3) Managers of operations offices responsible for approving safety study reports shall assure that all changes to nuclear explosives and systems which might have safety implications that take place after approval of the pertinent safety study report receive an appropriate review.

5. NUCLEAR SAFETY SURVEY GROUPS.

a. Organization.

- (1) The manager of the operations office responsible for a proposed operation or test in which it is believed that a previously approved and still valid safety study report may be applicable shall appoint the chairperson for a safety survey of the operation or test.
- (2) The chairperson shall schedule the safety survey and request appointment of the additional survey group members and advisors by other operations offices, area offices, and DOE contractor organizations.
- (3) Safety survey group members shall be personnel other than those having immediate design, development, or operational responsibility for the nuclear explosive and the operation or test under consideration.

b. Functions. To provide the manager of the operations office responsible for a proposed operation or test with a comparative analysis of the proposed operation or test with a similar operation or test, covered by an approved and still valid safety study report, in order to determine the adequacy and validity of the approved safety study report to the proposed operation or test.

c. Scope.

- (1) The nuclear safety survey group shall consider and evaluate, as appropriate:
 - (a) All aspects of the proposed operation or test.
 - (b) The characteristics of the operation or test.

12-18-80

- (c) The characteristics of associated systems in order to determine their adequacy and validity.
- (d) Applicability of previously approved safety study reports to the proposed operation or test under study.
- (2) When a safety survey group is unable to establish that existing and still valid safety study reports are adequate and applicable to the proposed operation or test, the safety survey group shall recommend a nuclear safety study group be convened.

d. Safety Survey Group Report.

- (1) The safety survey group's formal report shall be provided the cognizant manager.
- (2) The formal report shall include, as a minimum:
 - (a) A description of the proposed operation or test, the nuclear explosive involved, and associated systems sufficient to support the safety survey group's conclusions and recommendations.
 - (b) A listing of all approved and valid nuclear safety study reports considered and deemed applicable to the proposed operation or test.
 - (c) Specific conclusions, recommendations, and any proposed modifications to previously approved safety rules.

e. Approval Procedures.

- (1) The manager of the operations office responsible for a proposed operation or test studied shall approve or disapprove the report.
- (2) Documentation of the manager's action shall be maintained as an integral part of the safety survey report. The documentation shall include reasons for disapproving the safety survey group's recommendations.

f. Continuing Validity of Safety Survey Report. An approved safety survey report is valid only for the proposed operation or test considered.

CHAPTER VII

ELECTRICAL TESTER CONTROL PROGRAM

1. GENERAL. This chapter establishes the requirements for a comprehensive electrical tester program for the design, control, calibration, operation, storage, and repair of electrical testers as a part of this Order.
2. IMPLEMENTATION. Managers of operations offices responsible for operations with nuclear explosives conducted or sponsored by the DOE shall establish an electrical tester control program. As a minimum, the program will provide for:
 - a. The establishment of tester design criteria, as appropriate.
 - b. The specifying agency to prepare an analysis and evaluation of each tester to be used with nuclear explosives. The analysis should discuss safety features, circuit and pin failures, and the vulnerability of the tester to an inadvertent or deliberate act which might affect nuclear explosive safety. In addition, the specifying agency shall prepare the instructions for operating the tester, safety checkout procedures, acceptance procedures, and calibration procedures.
 - c. A review and evaluation of the tester analysis by a nuclear safety study or survey group.
 - d. The establishment and maintenance of a DOE record of electrical testers approved for use with nuclear explosives.
 - e. The establishment of procedures to assure that approved testers are properly sealed, controlled, stored, maintained, calibrated, and operated.

12-18-80

CHAPTER VIIINUCLEAR EXPLOSIVE OCCURRENCE REPORTING, ANALYSIS,
AND INFORMATION DISSEMINATION PROGRAM

1. GENERAL. This chapter establishes a program whereby operating experiences, unusual occurrences, incidents, or accidents occurring during operations with nuclear explosives, which have potential nuclear safety implications, are reported and analyzed. The objective of this program is to effect the maximum utilization of nuclear explosive operating experiences for the purpose of preventing the repetition of any occurrence which diminishes nuclear explosive safety by constituting an actual or potential contribution toward an accidental or unauthorized detonation (high explosive or nuclear).
2. APPLICABILITY.
 - a. The reporting requirements set forth in this chapter apply to all operations conducted or sponsored by the DOE with nuclear explosives.
 - b. The reporting requirements set forth in this chapter are supplementary to the requirements of Interim Management Directive 5001, dated 9-27-77, which is being used as interim guidance pending issuance of a final DOE Order on notification, investigation, and reporting of occurrences. The reporting requirements of that directive are controlling, and duplication of reporting is neither required nor desired.
 - c. Formal investigations as described and prescribed in the directive referenced in paragraph 2b, above, are not required for occurrences reported under this Order.
 - d. Occurrences subject to the provisions of the directive referenced in paragraph 2b, above, that require a formal investigation, are to be reported and processed under the provisions of that directive.
3. SCOPE.
 - a. The reporting and analysis system established by this chapter is for the purpose of gathering information concerning operational experiences, unusual occurrences, incidents, and accidents with nuclear safety implications in order: to analyze the information and to determine what actually occurred; to determine what, if any, corrective action should be taken; and to promptly and effectively disseminate the results of the analysis and information concerning such action deemed necessary to prevent a recurrence of the incident or accident to all organizations whose operations could be affected.
 - b. Examples of operational experiences, unusual occurrences, incidents, or accidents which are to be reported under this program are:
 - (1) The unplanned introduction of electrical power into a nuclear explosive.

- (2) The premature operation of a ready-safe switch or strong-link switch.
- (3) The premature installation of removable critical components.
- (4) The activation of controls, contrary to prescribed procedures.
- (5) Damage to a nuclear explosive.
- (6) The so-called "near miss" of any description.

4. IMPLEMENTATION. Managers of the operations offices responsible for operations with nuclear explosives shall establish a program for reporting, analyzing, and disseminating information concerning operating experiences, unusual occurrences, incidents, and accidents which actually or potentially degrade nuclear explosive safety. The program shall include, as a minimum, provisions for:
- a. The reporting of operational experiences, unusual occurrences, incidents, and accidents to the responsible manager within 3 working days.
 - b. Analyzing the circumstances surrounding an occurrence and for determining what, if any, corrective actions should be directed or recommendations disseminated to prevent a recurrence of the event.
 - c. The establishment of ad hoc technical analysis groups, when deemed necessary, to perform the analysis functions and to develop recommendations for corrective action when deemed necessary.
 - d. Staffing the ad hoc technical analysis groups employing in-house expertise, including technically qualified contractor personnel.
 - e. The nomination of technically qualified personnel to serve as members of ad hoc technical analysis groups, including contractor personnel, as requested by other managers of operations offices.
 - f. The prompt and effective dissemination of recommended corrective action and information concerning reported occurrences to all concerned organizations and activities, including the Department of Defense, whose operations might be affected by similar occurrences.

CHAPTER IX

RESPONSIBILITIES AND PROCEDURES FOR PARTICIPATION IN THE
DEPARTMENT OF DEFENSE PROGRAM FOR NUCLEAR WEAPON AND NUCLEAR WEAPON SYSTEM SAFETY

1. GENERAL. This chapter establishes procedures and requirements for accomplishing the DOE's responsibilities for participation in the Department of Defense program for nuclear weapon and nuclear weapon system safety and for the development, review, approval, and monitoring of nuclear weapon and nuclear weapon system safety rules for nuclear weapons transferred to the custody of the Department of Defense.
2. ADMINISTRATION.
 - a. The Director of Military Application shall:
 - (1) Administer DOE's participation in the Department of Defense program for nuclear weapon and nuclear weapon system safety.
 - (2) Coordinate with and serve as the point of contact for the Department of Defense and services in matters associated with the Department of Defense program for nuclear weapon and nuclear weapon system safety.
 - b. The Manager, Albuquerque Operations Office, shall:
 - (1) Assist the Director of Military Application in the administration of the DOE participation in the Department of Defense program for nuclear weapon and nuclear weapon system safety as directed herein and as may be further directed by the Director of Military Application.
 - (2) Task the weapon design laboratories, as appropriate, to provide technical assistance, as required.
3. PARTICIPATION IN DEPARTMENT OF DEFENSE SAFETY STUDIES AND REVIEWS. The Manager, Albuquerque Operations Office, shall:
 - a. Serve as the point of contact for the military services and their safety study groups concerning DOE participation in the various military services safety studies and reviews.
 - b. Provide representatives to serve as members of the military services safety study and operational review groups.
 - c. Task the weapons design laboratories, as appropriate, to provide technical assistance to the military services safety study groups and DOE representatives serving as members on the military services safety study groups.
4. REVIEW AND APPROVAL PROCEDURES FOR DEPARTMENT OF DEFENSE PROPOSED NUCLEAR WEAPON SYSTEM SAFETY RULES.
 - a. Review procedures prior to interim approval. When it is deemed an operational necessity by the Secretary of Defense to grant interim

12-18-80

approval for a set of proposed nuclear weapons system safety rules, the DOE review and coordination procedures shall be as follows:

(1) The Director of Military Application shall:

- (a) Upon receipt of proposed Department of Defense safety rules for coordination, conduct a review of the proposed safety rules based upon the concept of operations, status of safety study recommendations, the design safety features of the nuclear weapon(s), and the delivery system.
- (b) Forward copies of the proposed safety rules to the Manager, Albuquerque Operations Office, for his use in assisting in the conduct of the review of the proposed safety rules.
- (c) Provide comments and recommendations to the Office of the Secretary of Defense staff (Assistant to the Secretary of Defense (Atomic Energy)) within 30 days of receipt.
- (d) In the event there are no unresolved policy issues in the proposed safety rules, provide DOE coordination for the granting of interim approval, and inform the Assistant Secretary for Defense Programs.
- (e) In the event there are unresolved policy issues in the proposed safety rules, the unresolved issues shall be submitted in an action memorandum to the Under Secretary for resolution.

(2) The Manager, Albuquerque Operations Office, shall:

- (a) Upon receipt of the proposed safety rules, conduct an analysis and review of the proposed safety rules and of the safety study group recommendations in order to assist in the development of DOE comments and recommendations.
- (b) Provide the Director of Military Application comments and recommendations on the proposed safety rules in a timely manner in order to permit him to meet the assigned suspense date.
- (c) Task the Sandia National Laboratories to assist in the conduct of the analysis and review and in the development of DOE comments and recommendations.

b. Review procedures prior to final approval.

(1) The Director of Military Application shall:

- (a) Upon receipt of proposed Department of Defense safety rules for DOE concurrence, conduct a systems analysis and technical

12-18-80

review of the proposed safety rules based upon the concept of operations, the status of the safety study group recommendations, the design safety features of the weapon(s), and the delivery system.

- (b) Forward copies of the proposed safety rules to the Manager, Albuquerque Operations Office, for his use in assisting in the conduct of the analysis and review of the proposed safety rules.
 - (c) In the event the systems analysis and technical review reveal the need for modifying or changing the proposed safety rules, coordinate such modifications or changes with the Office of the Assistant to the Secretary of Defense (Atomic Energy) staff.
 - (d) Conduct a field review of the proposed safety rules as described in paragraph 6, as required.
 - (e) Prepare a review of the proposed safety rules, and coordinate the review as an action memorandum with appropriate recommendation(s) for consideration of the Under Secretary.
 - (f) Coordinate and obtain concurrences in the action memorandum from:
 - 1 The Albuquerque Operations Office (with the Sandia National Laboratories' assistance) based upon the systems analysis, technical review, and the recommendation(s).
 - 2 The Office of the General Counsel based upon a review of the proposed Department of Defense safety rules from the standpoint of the law.
 - 3 The Office of Safeguards and Security, if the Director determines that a review of the proposed Department of Defense safety rules for security purposes is required.
 - (g) Make every effort to complete all staff actions and submit the action memorandum to the Under Secretary for consideration within 90 days of receipt of the proposed Department of Defense safety rules from the Secretary of Defense.
- (2) The Manager, Albuquerque Operations Office, shall:
- (a) Upon receipt of the proposed safety rules, conduct an analysis and review of the proposed safety rules and of the status of the safety study group recommendations in order to assist in the development of DOE comments and recommendations.
 - (b) Provide comments and recommendations to the Director of Military Application in a timely manner in order to permit him to meet the assigned suspense date.

- (c) Assist the Director of Military Application staff representatives in the conduct of the field review.
- (d) Task the Sandia National Laboratories to assist in the conduct of the analysis and review, in the development of DOE comments and recommendations, and in the field review.

5. PROCEDURES FOR PROCESSING PROPOSED ADMINISTRATIVE CHANGE TO APPROVED DEPARTMENT OF DEFENSE NUCLEAR WEAPON SYSTEM SAFETY RULES. The Director of Military Application shall:

- a. Determine in each instance whether or not proposed change is nonsubstantive in nature and should be processed administratively or whether formal processing action is required. In making such a determination, the proposed administrative change shall be measured against the following:
 - (1) A nonsubstantive change may be defined as one of the following:
 - (a) Changes in nomenclature.
 - (b) Editorial changes to bring particular rules into agreement with approved rules of a later date.
 - (c) Deletion of weapons and delivery vehicles no longer in the inventory.
 - (d) Addition of delivery vehicle models to approved rules when no change in nuclear safety is involved.
 - (e) Other changes not involving nuclear safety.
 - (2) A proposed administrative change shall satisfy the following parameters:
 - (a) There is no change in established safety policy.
 - (b) There is no change to the operational concept upon which the safety rules are based.
 - (c) There is no change to any of the nuclear safety features (either by modification, addition, or removal) in either the weapon(s) or delivery vehicle.
 - (d) There are no changes to specific restrictions as set forth in the rules.
 - (e) There are no outstanding unresolved recommendations which would degrade nuclear explosive safety.

12-18-80

- b. Obtain Albuquerque Operations Office and Sandia National Laboratories coordination and concurrence in processing proposed changes administratively.
- c. Process the administrative change to approved Department of Defense nuclear weapon system safety rules as follows:
 - (1) Prepare a staff memorandum to the Assistant Secretary for Defense Programs describing the proposed administrative change, the reason(s) for the change, and its effect on approved safety rules.
 - (2) Prepare for the Assistant Secretary for Defense Programs' signature a reply to the Secretary of Defense stating DOE concurrence.

6. FIELD REVIEW.

- a. Purpose. To conduct a review of proposed Department of Defense nuclear weapon system safety rules for new or modified weapons systems in an operational environment; and to observe operations conducted in compliance with the proposed safety rules in order to determine the adequacy of the proposed safety rules, an understanding of the implementation of the proposed safety rules at the operational level, and the need for possible change(s) in the proposed safety rules prior to DOE concurrence and approval by the Secretary of Defense.
- b. Scope. The field review shall include:
 - (1) Briefings by the appropriate levels of command.
 - (2) Discussions and demonstrations by elements participating in the stockpile-to-target sequence in order to determine:
 - (a) The adequacy of the proposed nuclear weapon system safety rules.
 - (b) Conformance with the approved concept of operations.
- c. Responsibilities
 - (1) The Director of Military Application shall:
 - (a) Request the scheduling of the field review through the office of the Assistant to the Secretary of Defense (Atomic Energy).
 - (b) Notify the Manager, Albuquerque Operations Office, of the scheduling of the field review.
 - (c) Conduct the field review.

12-18-80

(2) The Manager, Albuquerque Operations Office, shall:

- (a) Provide membership to the field review team.
- (b) Task Sandia National Laboratories to provide a member to the field review team.

CHAPTER X

MONITOR AND APPRAISAL PROGRAM

1. GENERAL. This chapter provides the guidance and specific procedures for the conduct of a continuous and positive monitor and appraisal program to keep top management informed, to assure safety in operations involving nuclear explosives, and to assure compliance with the requirements of this Order.
2. REQUIREMENTS.
 - a. The Director of Military Application shall:
 - (1) Conduct periodic monitoring visits to selected field organizations in order to remain fully aware of operations conducted within the scope of this Order.
 - (2) Conduct an annual appraisal of the operations offices assigned responsibilities in the Program to Prevent Accidental or Unauthorized Nuclear Explosive Detonations using the Appraisal Guide set forth in Attachment 1 as a reference.
 - (3) Prepare and transmit to the appropriate manager a report on the results of the appraisal within 60 days after the appraisal. This report will be in the format set forth in Attachment 2.
 - b. Managers of the operations offices assigned responsibilities in the program to prevent accidental or unauthorized nuclear explosive detonations shall:
 - (1) Monitor the performance of their respective area offices and contractors.
 - (2) Conduct an appraisal annually of each area office and contractor involved in the program to determine compliance with the provisions of this Order.
 - (3) Prepare a written report on the results of the appraisal and transmit it to the organization within 60 days of the appraisal. Appraisal reports should conform to the format established in Attachment 2.
 - (4) Establish a file of appraisal reports and a formal followup system to monitor actions taken on recommendations contained in the appraisal reports.
3. IMPLEMENTATION.
 - a. The Director of Military Application shall:

- (1) Conduct periodic monitoring of visits to a selected field organization and make any recommendations deemed appropriate.
 - (2) Organize, schedule, and coordinate the annual Headquarters appraisal visits.
 - (3) Provide at least two members to the Headquarters appraisal team, one of whom will serve as the appraisal team captain.
 - (4) Assume the responsibility for the preparation, distribution, and followup of the appraisal reports.
- b. The Division of Operational and Environmental Safety shall provide an experienced safety program appraiser to be a member of the appraisal team.
- c. Managers of operations offices assigned responsibilities in the program to prevent accidental or unauthorized nuclear explosive detonations shall:
- (1) Perform annual appraisals of their area offices and contractors who have been assigned responsibilities in the program to determine their compliance with the provisions of this Order.
 - (2) Prepare a written report on the results of the appraisal and send it to the organization appraised.
 - (3) Followup on recommendations made to assure satisfactory resolution.
 - (4) Perform monitoring visits to contractors as deemed necessary to remain fully informed on field operations.

APPRAISAL GUIDE

1. GENERAL. This appraisal guide has been prepared for use by the Headquarters and field office appraisal teams with the intentions of providing a systematic checklist and of indicating to the field organizations those items which are of interest to the Headquarters.
2. APPRAISAL GUIDE.
 - a. Management Interest and Support.
 - (1) What system is used to keep management informed? What information does this system provide?
 - (2) How is the system functioning? What is the frequency of reports? Who gets them?
 - (3) Is management active in the decisions and operations? In what areas?
 - (4) Is management kept informed about changes?
 - b. Organization and Administration.
 - (1) Do local directives adequately implement program requirements? Have these been properly disseminated?
 - (2) Are duties and authorities clearly stated at all levels?
 - (3) Is the chain of command clear and understood?
 - (4) Who is involved in this program?
 - (5) Where is the safety staff located? Is it adequate?
 - (6) Are program records complete and adequate?
 - (7) How is the communication within the office? With the field?
 - c. Staffing.
 - (1) What are the qualifications of the safety staff members?
 - (2) Is the safety staff large enough?
 - (3) Is there a training program for the safety staff members?
 - (4) How is the training program functioning?

(5) Have there been any personnel changes in the safety staff since the last appraisal?

(6) Have the changes affected the safety staff's effectiveness?

d. Personnel Assurance Program.

(1) Have the requirements specified in Chapter II been implemented?

(2) Are the people involved knowledgeable?

(3) Are all appropriate people included in Personnel Assurance Program? How is this determined?

(4) Are the Personnel Assurance Program certification lists current?

(5) What are the certification procedures?

(6) What review actions have taken place?

e. Training Program.

(1) Do the critical duty and emergency training programs contain the elements required?

(2) Are the training records for the programs complete and auditable?

(3) Are the emergency training exercises realistic?

f. Two-Person Concept for Operations.

(1) What instructions have been issued to assure compliance with the provision of Chapter V?

(2) Are the instructions adequate?

(3) What procedures have been developed to control entrance to no-lone zones?

g. General Nuclear Safety Rules.

(1) Do the records show the degree of compliance with the general nuclear safety rules?

(2) What procedures have been established to assure that operations are conducted in accordance with the general nuclear safety rules?

(3) Have specific nuclear safety rules been developed to supplement the general nuclear safety rules?

(4) What procedures are used to disseminate the specific and general nuclear safety rules?

- (5) What procedures have been established to assure that all approved specific nuclear safety rules are implemented?

h. Safety Studies and Surveys.

- (1) Have the requirements of Chapter VI been met?
- (2) Are the studies timely?
- (3) Have recommendations been approved and implemented before operations are started?
- (4) Are study group members qualified?
- (5) Is the data presented study groups adequate to justify the conclusions?
- (6) Are the surveys used valid?
- (7) How have the minority opinions been handled?
- (8) Who is in the approval chain? What are their responsibilities?
- (9) Since the last Headquarters appraisal:
 - (a) List the safety studies chaired (include dates, cognizant laboratory, etc.).
 - (b) List the safety studies attended.
 - (c) List the safety studies not attended and reason.
 - (d) List the safety surveys attended.
 - (e) List the safety surveys not attended and reason.

i. Electrical Tester Control Program.

- (1) Are the requirements of Chapter VII implemented? How?
- (2) Are the instructions to the field accurate and adequate?
- (3) Are all testers approved before use?
- (4) How is this assured?
- (5) Are the studies adequate?
- (6) Is the electrical tester list current?

j. Incident and Accident Reporting.

- (1) What kind of a system has been established to implement the requirements of Chapter VIII?
- (2) How is the data analyzed and by whom?
- (3) What is the average time between the event and the dissemination of the report?
- (4) Are the reporting and processing channels clearly specified?
- (5) Are these known to proper people?
- (6) What is management's involvement?
- (7) Have all required events been reported? How is this determined?

k. Monitoring, Appraising, and Reporting.

- (1) Have the appraisals been made as required by Chapter X?
- (2) Are they comprehensive?
- (3) Have recommendations been provided to the appraised organizations on a timely basis?
- (4) What is the followup system?
- (5) Is it effective?
- (6) Are the appraisal records maintained in an auditable form?

l. References.

- (1) Are the references provided in Chapter XI helpful?
- (2) Does the organization have any recommendations for improving the reference list?

m. Operations With Nuclear Explosives Not Known To Be One-point Safe.

(1) Have instructions been issued to assure that operations with such devices are conducted only at the Nevada Test Site?

(2) How is compliance assured?

n. Recommendations. Does the organization have any recommendations for improving the program?

3

3

3

3

3

APPRAISAL REPORT FORMAT

1. INTRODUCTION. (Includes who, what, why, where, when, and how.)
2. SUMMARY. (A brief summary of significant observations, conclusions, and recommendations.)
3. OBSERVATIONS. (Brief statements of findings, conclusions, and recommendations in each of the following):
 - a. Management Interest and Support.
 - b. Organization and Administration.
 - c. Staffing.
 - d. Personnel Assurance Program.
 - e. Training Program.
 - f. Two-Person Concept of Operations.
 - g. General Nuclear Safety Rules.
 - h. Safety Studies and Surveys.
 - i. Electrical Tester Control Program.
 - j. Incident and Accident Reporting.
 - k. Monitoring, Appraising, and Reporting.
 - l. References.
 - m. Recommendations.
4. CONCLUSIONS. (Overall evaluation of program--both strengths and weaknesses.)
5. RECOMMENDATIONS. (Specific statements of recommendations.)

CHAPTER XIREFERENCES

1. GENERAL. The references listed below provide standards and regulations applicable to the program to prevent accidental or unauthorized nuclear explosive detonations and shall be employed in developing detailed procedures for implementing the provisions of this Order. DOE-DNA TP refers to those publications issued through the Joint Atomic Weapon Publications System.
2. DOE-DEPARTMENT OF DEFENSE JOINT ATOMIC WEAPON PUBLICATIONS. A complete listing of DOE-Department of Defense Joint Atomic Weapon Publications is found in DOE-DNA TP 0-1 "Numerical Index to Joint Atomic Weapon Publications." This publication is updated twice each calendar year. Listed for ready reference are those joint publications which have a general application to the nuclear explosive safety program:
 - a. DOE-DNA TP 4-1, "Glossary of Nuclear Weapons Material and Related Terms."
 - b. DOE-DNA TP 20-5, "Plutonium Contamination Standards."
 - c. DOE-DNA TP 20-7, "Nuclear Safety Criteria."
 - d. DOE-DNA TP 20-11, "General Fire Fighting Guidance."
 - e. DOE-DNA TP 45-51, "Transportation of Nuclear Weapons Material."
 - f. DOE-DNA TP 45-51A, C, D, E, "Transportation of Nuclear Weapons Material" (Supplements).
 - g. DOE-DNA TP 50-20, "Procedures for Preparation and Use for Nuclear Weapons of Stockpile-to-Target Sequences."
 - h. DOE-DNA TP 60-6, "Explosive Ordnance Disposal Procedures, RSP for Nuclear Weapons."
 - i. DOE-DNA TP 60-18, "Explosive Ordnance Disposal Procedures; Fabrication, Assembly, and Adjustment Procedures; EOD Tools and Equipment."
 - j. DOE-DNA TP 60-19, "Explosive Ordnance Disposal Procedures; Incident or Accident Hazards Associated with Nuclear Ordnance."
 - k. DOE-DNA TP 60-20, "Explosive Ordnance Disposal Procedures; Packaging Procedures for Nuclear and Contaminated Items Following Incident/Accident."

3. OTHER PUBLICATIONS.

- a. AMCR 385-100, "Army Material Command Safety Manual."
- b. DOD INST 4145.26, "DOD Contractor's Safety Manual for Ammunition, Explosives and Related Dangerous Material." (Series)